

**New York State Department of Environmental Conservation
Division of Environmental Permits, Region 4**

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August 14, 2014

Sarah Sweeney, Environmental Manager
LaFarge North America
1916 Route 9W
Ravena, NY 12143

Re: DEC #4-0124-00001/00057
SPDES # NY-0005037
FACILITY: LaFarge Ravena Plant
Town of Coeymans, Albany County

Dear Ms. Sweeney:

Enclosed please find your modified SPDES Permit which becomes effective on August 14, 2014, and expires on September 30, 2015. The Department has carefully reviewed the comments submitted by LaFarge and by the US EPA relative to the draft permit, and in accordance with existing regulations governing this discharge. Further, the Department has had several meetings with LaFarge over the last several years to discuss this modification, and the facility's concerns to resolve any outstanding issues. The attached Response to Comments outlines the concerns raised, and any changes the Department was able to make to the permit to address those concerns.

Please read all permit conditions carefully. All permit documents must be available upon request by the Department staff as well as distributed to and understood by your personnel responsible for the proper operation of the facility and compliance with the discharge limits. Any violation of these permit conditions constitutes a violation of the Environmental Conservation Law.

If you have any questions regarding this permit, you may contact the Division of Environmental Permits at the above address. Please refer to the above-referenced numbers when you are corresponding with this office or when you are applying to renew or modify this permit.

Any questions regarding your annual pollutant discharge elimination fee should be addressed directed to the Regulatory Fee Determination Unit at 1-800-225-2566.

Sincerely,

Nancy M. Baker
Environmental Analyst 2
Region 4

Enclosure (Permit)

cc: Jamie Malcolm, Div. of Water, Region 4
Andrea Dzierwa, Div. of Water, Region 4
Bureau of Water Permits, Broadway
Sudhir Mahatma, DOW-CO
Shayne Mitchell, DOW-CO
Richard Ostrov, Esq., Region 4
Michelle Josilo, US EPA
Dept. of Health
File

Lafarge Building Materials Inc.

SPDES # NY 000 5037

Response to comments:

Comment# 1

Additional Outfalls, page 2 of 27

Typographical Error- Outfall 017. Outfall 023 and Footnote

Outfall 017 – Receiving water/class is incorrect. The outfall discharges to Unnamed Tributary 1 to Coeymans Creek. Please correct this typographical error on SPDES Permit Fact Sheet page 5 of 30 as well.

Outfall 023 - Under Latitude/Longitude please delete footnote "5".

Footnote stating "Outfall 020, 024, 025 become active in July 2016 or when Plant Modernization is complete, whichever is earlier." This footnote needs to be revised by deleting reference to "020" and replacing it with "021". Please correct this typographical error on SPDES Permit Fact Sheet page 6 of 30 as well.

Response:

Outfall 017 – Receiving water description has been updated. Water Class does not change.

Outfall 023 – The superscript 5 of the footnote has been removed.

Outfall 020 has been replaced by Outfall 021 in the permit as well as the Factsheet.

Comment# 2

Outfall 003 page 4 of 27

Instantaneous Maximum Temperature Effluent Limits of ΔT June 1 – September 30 and ΔT October 1 – May 31

The draft permit sets forth instantaneous thermal discharge limits on Outfall 003's effluent which is comprised of non-contact cooling water (NCCW) and storm water. The NCCW temperature contribution has been isolated and will be monitored

upstream of Outfall 003 pond at an internal monitoring point (Outfall 25A) in accordance with 6 NYCRR Part 704. Outfall 003's temperature monitoring will again be a continuous commingled reading taken after the NCCW and the upstream storm water runoff sources combine at the Outfall 003 ponds. Both the storm water sources and the ponds' ambient temperature are highly variable and subject to natural temperature fluctuations which Lafarge cannot control.

The potential variability of the storm water ponds' effects will likely overshadow the actual thermal discharges from the plant. The ponds absorb solar radiation and during dry summer periods with little flow followed by a heavy storm event, could result in a first flush discharge of heated water beyond the volume that the quench wells could temper. In these circumstances, the instantaneous 6T maximum limit would be impossible for Lafarge to meet. While Lafarge's investment in dredging the ponds is anticipated to temper the thermal discharges, this first flush of storm water is uncontrollable and could result in a permit violation at Outfall 003. Therefore, Lafarge is requesting a revision to the 6T instantaneous maximum effluent limits that will account for magnitude, duration, and frequency of thermal discharges as follows:

- Magnitude: No change to the ΔT effluent limits, as these are water quality effluent limits;
- Duration: ΔT will be reported as a daily average, not instantaneous maximum

In addition Lafarge is informing the Department that it will be evaluating the current thermocouples used by Lafarge to monitor the outfall, upstream and downstream temperatures. Lafarge is performing this evaluation to ensure that the most accurate data is captured. Based on the results of the evaluation Lafarge may modify, replace and/or relocate them.

"Sample Type" Requirement for Flow

As described in the Lafarge's SPDES permit modification application, the new CKD leachate treatment system occupies the footprint of the existing building where effluent flow to the recycle system and/or to Outfall 003 was monitored using a recorder located at the building.

Response:

Outfall 003

Instantaneous temperature monitoring cannot be changed to Daily Average as it would result in relaxed or less stringent monitoring. Such action by the Department would be considered anti-backsliding which is contrary to regulatory requirements. The permit issued on Oct. 26, 2012 specifies Instantaneous Maximum for temperature for Outfall 003 because of Non Contact Cooling Water. Outfall 003 still contains of Non Contact Cooling Water.

The Sample Frequency for Flow has been changed to daily based on TOGS 1.2.1 and sample type has been changed to Instantaneous as requested.

The Sample Frequency for pH, TSS, SS, TDS, and Oil & Grease will remain as twice per week based on the Department's TOGS 1.2.1.

The total residual chlorine (TRC) effluent limits have been deleted as requested because Outfall 003 no longer contains Sanitary wastewater.

The WET testing requirement has been deleted as requested because Outfall 003 no longer contains CKD leachate.

Comment# 3

Outfall 006, page 5 of 27

Typographical Error - Wastewater Type Description

The "aggregate processing operation" listed under wastewater type is no longer present and therefore should be deleted from the description.

Response:

Outfall 006 description has been updated as requested.

Comment# 4

Outfall 010, page 6 of 27

Total Suspended Solids Effluent Limits

Lafarge is requesting that the effluent limits for total suspended solids be revised from a monthly average of 25 mg/L and a daily maximum of 45 mg/L to a

monthly average of "monitor only" and a daily maximum of 50 mg/L once the quarry water is no longer present. The daily maximum effluent limit of 50 mg/L would be consistent with similar type outfall (i.e. stormwater from roadside drainage) effluent limits at Outfall 014, 015, 016, 017, 018 and 019. A new footnote could be added.

Response:

The effluent limits for Total Suspended Solids for Outfall 010 will be updated to Monitor (Monthly Average)/ 50 mg/l DM as requested after the Plant Modernization is complete and quarry water is no longer discharged to this outfall.

Comment# 5

Outfall 017, page 8 of 27

Typographical Error - Receiving Water Description

Outfall 017 discharges to Unnamed Tributary 1 to Coeymans Creek. Outfall 018 discharges to the Unnamed Constructed Tributary (Restoration).

Response:

Outfall 017 and Outfall 018 receiving water description updated as requested.

Comment #6

Outfall 020, page 8 of 27 pH Minimum and Maximum Effluent Limit

Lafarge is requesting that pH minimum and maximum effluent limit be revised to 6.0 – 9.0 SU which is consistent with Outfall 010's pH effluent limit (the outfall currently discharging excess quarry water) and the pH effluent limits for the site's other permitted outfalls (i.e. Outfalls 006, 017, and 021) which discharge to the same receiving water body (i.e. Unnamed Tributary 1 to Coeymans Creek).

Typographical Error - Footnote "@"

Lafarge is requesting that Footnote "@" be changed to "discharge authorization and monitoring is effective from the date the plant modernization begins". Lafarge had originally requested that this footnote reference apply to Outfall 021 which was incorrect. Lafarge will be redirecting the quarry water from Outfall 010 to

new Outfall 020 before 2016 and therefore the footnote should apply to Outfall 020 not Outfall 021.

Response:

The pH at Outfall 020 has been updated to 6.0 – 9.0. It is based on the Department's Stone, Sand, & Gravel guidance and available internal dilution. The permit issued in CY 2012 indicates the same pH range as 6.0 – 9.0 and as such would not be considered anti-backsliding.

The footnote has been updated as requested.

Comment #7

Outfall 021, 024, 025, page 9 of 27

Typographical Error - Footnote "@@"

Lafarge is requesting that Footnote "@@" be revised by adding "021" in the following sentence:

"Discharge authorization and monitoring requirement for outfall 021, 024, 025 begin when the plant modernization is complete or in July 2016 whichever is earlier".

The last sentence "However for outfall 021 the discharge authorization and monitoring is effective from the date the plant modernization begins" should also be deleted.

As stated above in Item No. 5, Lafarge had originally requested the earlier effective date for discharge and monitoring begin at Outfall 021 but this was incorrect. The earlier effective date for discharge and monitoring was only applicable to Outfall 020.

Typographical Error - Wastewater Type Description for Outfall 024

The wastewater type description for Outfall 024 is incorrect. The correct description upon completion of the RPM plant is "Storm water – Material Storage Pile Area".

Effluent Limits for Total Suspended Solids for

Outfall 024

Lafarge is requesting that upon completion of the RPM plant the total suspended solids effluent limits be revised from a monthly average of 25 mg/L and a daily maximum of 45 mg/L to a monthly average of "monitor only" and a daily maximum of 50 mg/L. The daily maximum effluent limit of 50 mg/L would be consistent with the EPA Effluent Guidelines (40 CFR Part 411 Cement Manufacturing Point Source Category), specifically Subpart C (Material Storage Pile Runoff Subcategory) and current effluent limits assigned to similar type outfalls (Outfall 012 and 013) which are located near the gypsum pile area.

Response:

The permit has been updated to include Outfall 021 for discharge authorization and monitoring when plant modernization is complete or July 2016 (whichever is earlier).

The description for Outfall 024 description has been updated to Storm water – Material Storage Pile Area, as requested.

The Total Suspended Solids limit for Outfall 024 has been updated to Monitor (Monthly Average) / 50 mg/l (Daily Maximum) according to 40 CFR Part 411 Cement Manufacturing Point Source Category.

Comment #8

Outfall 25A, page 10 of 27

pH Minimum and Maximum Effluent Limit

Lafarge is requesting that the NCCW pH minimum and maximum effluent limits be revised from 6.5 – 8.5 SU to 6.0 – 9.0 SU which is consistent with Lafarge's permitted outfalls (i.e. Outfall 003, 010, 006, 007, 014, 015, 016, 019, etc.) also discharging to either Unnamed Tributary 1 to Coeymans Creek or discharging to Coeymans Creek. Similar to these permitted outfalls the NCCW contribution will not alter the naturally occurring pH range of either receiving water.

"Sample Frequency" Requirement for pH, Flow and Temperature

According to EPA guidance, by definition non-contact cooling water discharges do not contain or come into contact with raw materials, intermediate products, finished products or process wastes. Since NCCW does not come into contact with these

materials it is assumed that NCCW discharges do not contain toxic or hazardous pollutants. NCCWs characteristics are derived from its source water and Department approved non-toxic water treatment additives used to control corrosion or prevent deposition. Therefore, the water quality standards generally applicable to NCCW are both pH and temperature.

A daily sampling frequency for flow and temperature will not be possible since, on weekends, the plant operates on a reduced staff shift schedule and plant technical processes cannot be interrupted without affecting plant personnel safety. Therefore the ability of plant personnel to safely collect a sample during weekend operations, especially during winter weather conditions, is not practicable.

Since October 2010 Lafarge has monitored the NCCW contribution at Outfall 003 as a comingled source with storm water, treated CKD leachate and treated sanitary effluent 2/week. Prior to 2010 Lafarge monitored the contribution, again as a comingled source, 3/week. Lafarge is requesting a 1/week monitoring of pH, flow and temperature since the NCCW flow rate and these constituents will have minimal variability as compared with the previous monitoring requirements as a comingled discharge at Outfall 003.

Total Suspended Solids, Settleable Solids and Total Dissolved Solids Effluent Limits

Lafarge believes that the total suspended solids and settleable solids effluent limits are inappropriate for this outfall. The draft effluent limits of a monthly average of 20 mg/L and a daily maximum of 40 mg/L total suspended solids and daily maximum of 0.1 ml/L for settleable solids are listed in NYSDEC TOG 1.2.1 as NYSDEC Model Technology BPJ limits which were derived from division guidance on sand/gravel facilities using sedimentation. This is not applicable to this discharge.

Lafarge is also requesting that the monitoring for these parameters be deleted since the characteristics of NCCW submitted to the Department with the permit modification request indicated, with the exception of total dissolved solids, levels below water quality limits. As indicated in the permit modification request the total dissolved solids sampling result was attributed to the recycled water system which consisted of, in addition to cooling water, treated CKD leachate which is the likely source of total dissolved solids. The NCCW is not a source of total dissolved solids. The recycle system has been decommissioned and the current supply water source for NCCW will be Hudson River water until July 2016 when plant modernization is complete.

If the Department requires additional data on these specific parameters, then Lafarge is requesting that these parameters be monitored 1/month for up to 6-

months from the effective date of this permit and the results submitted separately to the RWE and BWP.

Lafarge is also requesting clarification on the footnote notation referencing specific additional biological monitoring requirements, if applicable, during the time period of EDPM to June 2016.

Response:

pH range will remain as 6.5 – 8.5 as the pH of the Hudson River water used as Non Contact Cooling water has been in the range of 6.33 – 8.14 based on data collected during 2008-2013 by the Department in our RIBS program. The outfall 25A discharges to the Unnamed Trib. Of Coeymans Creek – Class C for which the water quality based effluent limit for pH is 6.5-8.5.

Station # 21NYDECA-13010139 – Lower Hudson River in Bethlehem

The monitoring frequency for Flow, pH and Temperature has been updated to weekly as requested.

Effluent Limits for TSS, TDS, and SS have been updated as Monitor only as the Hudson River Water used for non-contact cooling water purposes, is not undergoing any treatment. The outfall 25A is planned to be terminated in June 2016 or when plant modernization is complete, whichever is earlier.

The weekly monitoring of TDS for 10 weeks from the EDPM is required as requested by the USEPA.

Comment #9

Outfall 027, page 11 of 27

pH and Total Suspended Solids Effluent Limits

Lafarge is requesting that Outfall 027 pH effluent limits be revised from 6.5 – 8.5 SU to 6.0 – 9.0 SU which is consistent with the previously permitted Outfall 004 and Outfall 005 which discharge to the same receiving water (Unnamed sub-trib to Hannacroix Creek) and Lafarge's similar type permitted outfalls (i.e. Outfall 014, 015, etc.) for roadways and overland runoff. Lafarge is also requesting that the effluent limits for total suspended solids be revised from a monthly average of 25 mg/L and a daily maximum of 45 mg/L to a monthly average of "monitor only" and a daily maximum of 50 mg/L to be consistent with effluent limits assigned to outfalls from "plant roadways and/or overland runoff"

Interim Limit of "Monitor only" for pH, Total Suspended Solids, Settleable Solids and Oil and Grease for EDPM + 6 months

As discussed with the Department during a May 17, 2013 site inspection Lafarge submitted a design of the proposed stormwater treatment at Outfall 027. The Department, at time of the inspection and as summarized in a May 21, 2013 email from J Malcolm (NYSDEC) to M Stewart (Lafarge), indicated that earth moving activities could start but construction of the new treatment system could not begin until completion of the SPDES permit modification and addressing any public comments. Therefore Lafarge is requesting that interim limits of "monitoring only" for EDPM + 6 months be in place until the construction of the new stormwater treatment system is complete.

This delay in the final effluent limits is necessary since Lafarge, as requested by the Department, did not begin construction of the new Outfall 027 stormwater treatment system.. Lafarge is in the process of preparing the bid documents and will need the 6 months requested to obtain at least 3 bids, award the construction contract and allowing for weather-related delays complete the construction of the new stormwater treatment system.

Response:

The outfall 027 is yet to be constructed. The limits are based on the receiving water body and its class. The limits and monitoring of the parameters (pH, total suspended solids, settleable solids, and oil & grease) during construction phase will be addressed through the SPDES Stormwater Permit for Construction Activity by Region 4 Division of Water.

Comment #10

Outfall 23A, page 12 of 27

Monitoring Frequency of Total Residual Chlorine

Lafarge is requesting that the Chlorine, Total Residual (TRC) monitoring frequency be 1/week not daily. The current SPDES permit requires only 1/week monitoring for TRC. It is unclear why the monitoring frequency was increased.

The previous detections of fecal coliform above the permit effluent limits in 2013 (2 samples) and 2014 (2 samples) were not associated with a failure of the chlorine dosing system. As indicated by Lafarge the sampling results attributed to the fecal coliform exceedences in 2013 and 2014 had TRC levels well with permit effluent limits.

Response:

The Department's TOGS 1.3.3 requires the monitoring frequency for the Total Residual Chlorine (TRC) as Daily for less than 1 MGD effluent flow rate. Therefore the monitoring frequency specified as Daily in the draft permit will not change.

Comment #11

Outfall 023, page 13 of 27

Dissolved Oxygen and Total Aluminum Effluent Limits

In the November 2013 SPDES permit modification application Lafarge requested a 90-day monitor only period for dissolved oxygen and, if needed, 90-days to install a post aeration system. Lafarge also requested a monitor only period for total aluminum during Siemens water treatment chemical dosing optimization period for the new

CKD leachate treatment system. However, the Department did not grant this request and did not provide an explanation for not granting the monitoring only periods.

Lafarge respectfully requests again the 90-day monitoring only period for dissolved oxygen (with a 90-days install period for a post aeration system if needed) and a monitoring only period for total aluminum during the water treatment chemical dosing optimization period.

As stated in the November 2013 application dissolved oxygen was not identified as an effluent quality parameter during the early coordination with Department for the new CKD leachate treatment system. As a result it was not tested during the bench-scale tests or the pilot testing for the new treatment system. Lafarge also indicated that the effluent dilution analysis for acute mixing, which was prepared for the permit modification application to address total dissolved solids, demonstrated that this 90-day monitoring only period for dissolved oxygen will have a negligible effect on water quality in the Hudson River.

In addition, Lafarge also stated in the November 2013 application that aluminum is a component of the Alum coagulant which will be used in the new treatment system's reaction tank prior to microfiltration and that Siemens will need time to optimize the coagulant dosing an frequency during initial start-up to ensure that the aluminum limits will not be exceeded. Therefore a "monitor only" period is necessary to allow Siemens this operational flexibility.

Response:

Lafarge informed the department in December 2013 that the new treatment system for the Landfill Leachate was fully functional. The facility requests 90 day period from the EDPM due to the concern with the start up of the system. The Department provided directions to Lafarge in the Fall - 2013 with regards to this issue. It was noted that the facility should conduct pilot testing (with recycle) of the treatment system to comply with the proposed effluent limits. Sufficient time has been provided for the compliance of this work (i.e. six months) and as such, the request by Lafarge is denied.

Comment #12

Biological Monitoring Requirements ,page 16 of 17 Typographical Error -

Implementation of Best Technology Available

The sentence "Limit use of the Hudson River water for cooling purposes to 2 MGD, and only when primary sources of cooling water are inadequate to meet the cooling needs of the facility" is incorrect. The use of the Hudson River is not limited to cooling water needs as described. It is recommended that Lafarge's use of the Hudson River withdrawal, for consistency, be described as written in the Ravena Plant Modernization FEIS:

"Hudson River Water Withdrawal - Water withdrawals from the Hudson River will provide supplemental flow for cooling and process water needs, with water withdrawal rate being limited to what is needed to supplement the primary sources of quarry water and groundwater". The modernized facility will continue to use the existing intake structure to withdraw up to 2 MGD of Hudson River water only in the event that quarry and well water volumes is insufficient. "

In addition, the SPDES Permit Fact Sheet on page 25 of 30 states that with the closed-loop glycol cooling system the need for the Hudson River is eliminated. The need for the Hudson River is not eliminated but as stated above the withdrawal of up to 2 MGD of Hudson River water will only be in the event that quarry and well water volumes are insufficient.

Response:

Condition 1(e) has been modified to include the fact that water withdrawn from the Hudson River will be used in the cement manufacturing process as well for cooling purposes, and limited to 2 MGD. The Department did not include the following statement in requirement 1(e): "Water withdrawals from the Hudson River will provide supplemental flow for cooling and process water needs, with water withdrawal rate being limited to what is needed to supplement the primary sources of quarry water and groundwater."

The wording on page 25 of 30 of the fact sheet has been clarified to indicate that the need for Hudson River water for the closed-loop glycol system is eliminated.

Comment #13

Flow Diagrams, page 23 of 27 and 24 of 27

On page 23 of 27 the figure does not have "text" identifying Outfall 003 (generally found below the arrow and line identifying Coeymans Creek) which will become Outfall 028 upon RPM startup. The note mentions Outfall 003 changing to all stormwater and excess quarry water (from Outfall 020) but again it does not indicate its new outfall designation (028).

On page 24 of 27 the note should be revised to include Outfall 021 not Outfall 020 as follows - "Outfalls 021, 024 and 025 become active in July 2016". The reference to "Outfall 020" should be deleted.

Response:

The department prefers to retain the outfall number (i.e 003) and therefore page 23 will not change.

The foot note on page 24 has been updated as requested.

Comment #14

Fact Sheet Narrative

Typographical Error - Outfall 003 Description and Missing Outfall 020

The description for Outfall 003 states that quarry pump out is not included. Quarry pump out is included as Outfall 020. Outfall 020 (Excess Quarry Water) is not listed.

Response:

The fact sheet narrative for Outfall 003 has been updated to include excess quarry water.

Comment #15

Approval of Water Treatment Chemical Applications

Included with the November 2013 SPDES permit modification request application were Water Treatment Chemical (WTC) applications for products to be used by the new CKD leachate treatment system. The draft permit does not state if these products are approved for use. Please provide Lafarge with Department approval of these products.

Also, as part of Lafarge's EPA-approved plan of action for its storm water outfalls, Lafarge submitted new Water Treatment Chemical (WTC) applications in February 2014 for two polymers but has not received formal approval of these products as well. Please provide Lafarge with Department approval of these products.

Response:

The department is awaiting your response to our requests for additional information on the Water Treatment Chemicals. The department will process your request after it receives complete information.

Lafarge Building Materials Inc.

SPDES # NY 000 5037

Response to USEPA comments:

Comment #1:

Biological Monitoring Plan

Technological Installation and Operation Plan. The Technological Installation and Operation Plan in the Biological Monitoring Requirements section of the draft Lafarge permit requires the permittee to include “a schedule to implement the operational measures in Requirement 1(d) and (e)” in the Technology Installation and Operation Plan. However, there is no section 1(d) or 1(e) in the Biological Monitoring Plan. Please clarify what section this requirement refers to.

Hudson River Intake. The draft Lafarge permit specifies that, by July 1, 2016, no more than 2MGD of Hudson River water may be used for cooling purposes. The Verification Monitoring Program requires that the permittee submit an *Annual Water Use Summary report* which contains the monthly totals of Hudson River water used during the previous year. Monthly data is inadequate for ensuring that Lafarge takes no more than 2MGD. In order to ensure compliance with the permit, daily total and a specified continuous daily flow measurement are necessary. Please ensure that the Lafarge permit establishes an additional monitoring point with daily continuous flow monitoring for the Hudson River intake water.

Response:

Biological Monitoring Requirement No. 1 has been lettered for clarification.

The Department will require daily flow monitoring and requesting a monthly summary of this data along with Daily max. flow for each month to be incorporated into the Annual Water Use Summary report.

Comment #2:

Description of Monitoring Locations

The diagram of the treatment process on page 23 of the draft Lafarge permit is blurry and illegible. The map on page 24 of the draft Lafarge permit is too dark to be useful for identifying the additional outfalls. Please provide a diagram for the plant after modernization that clearly identifies the monitoring locations for all outfalls in the Lafarge permit and a legible map of the additional outfall locations.

Response:

Pages 23 and 24 are revised with best available diagrams.

Comment#3:**Outfall 25A – Non-contact Cooling Water Dissolved Solids**

As previously noted, NYSWQS state that, for dischargers to class C waters, the total dissolved solids shall not exceed 500 mg/l. The existing effluent quality for total dissolved solids, as stated in the fact sheet, for Outfall 25A is 1400 mg/l. Footnote 1 of page 17 of the fact sheet states that the high total dissolved solids concentration is “attributed to recycled cooling water while sampling” and is not expected. If sampling has only been done during a time that is not representative of normal operations of effluent quality, NYSDEC should establish additional short-term monitoring to collect sufficient data to conduct a reasonable potential analysis. Based on the outcome of the reasonable potential analysis, the permits must establish control measures for total dissolved solids (e.g., effluent limit, no-net addition limit, etc.)

Response:

As noted on page 10 of the permit, Outfall 25A is terminated in June 2016 or when plant modernization is complete, whichever is earlier.

The short term monitoring for TDS is not required as the 95th percentile concentration of TDS in the source of Non Contact Cooling Water (i.e. Hudson River) is 164 mg/l, based on 2008-2013 RIBS data for Lower Hudson River in Bethlehem station # 13010139. However as requested by the USEPA, a weekly monitoring of TDS for 10 weeks has been added. The facility will monitor the TDS Monthly thereafter.

Comment# 4

Footnotes.

The draft Lafarge permit contains the following unclear or incorrect footnotes:

A footnote for Outfall 003 must require EPA Method 1631 for mercury sampling.

Outfall 003 refers to footnote 4 for Whole Effluent Toxicity (WET) testing. However, the permit does not contain a footnote 4.

Response:

The footnote for Mercury, Total has been updated as requested.

The WET testing for Outfall 003 has been deleted as the CKD leachate is no longer discharged through this outfall.

Comment# 5:**Outfalls 006 and 007 – Stormwater Dissolved Solids.**

New York State’s Water Quality Standards (NYSWQS) at 6 NYCRR Part 703.3 state that, for discharges to class C waters, the total dissolved solids “shall be kept as low as practicable to maintain the best usage of the waters but in no case shall it exceed 500 mg/l”. As provided by the

fact sheet, the existing effluent quality for total dissolved solids is 1220 mg/l and 2940 mg/l at Outfalls 006 and 007, respectively. The total dissolved solids in the discharges from Outfalls 006 and 007 clearly have the reasonable potential to cause, or contribute to an excursion above the water quality standard for total dissolved solids – especially considering Outfall 007 discharges to water classified for trout spawning.

The high concentration of total dissolved solids in the stormwater effluent indicates that the Best Management Practices (BMPs) and Stormwater Pollution Prevention Plan (SWPPP) at the facility are insufficient to mitigate potential pollutant releases and protect water quality. NYSDEC must establish additional measures in the Lafarge permit to address the high concentration of total dissolved solids in the stormwater outfalls.

Response:

Outfalls 006 and 007 are storm water outfalls. During the storm events (wet weather events), the flow of the Coeymans creek significantly increases and may provide sufficient dilution to meet the applicable Water Quality Standard.

The permit will include short term monitoring program for Flow and TDS for Coeymans Creek from April 2015 to October 2015 to ascertain compliance with the applicable Water Quality Standard.

Comment # 6:

Outfall 007 – Monitoring Frequency.

The draft Lafarge permit establishes quarterly sampling for a variety of parameters at Outfall 007. During a site inspection in November 2011, EPA and NYSDEC visually observed cement kiln dust landfill seeps to Outfall 007. As cement kiln dust seeps may impact water quality and Outfall 007 discharges to a segment of Coeyman's Creek classified as trout waters, increased monitoring frequency is vital to ensuring that water quality and the best usages of the receiving water are protected. Please ensure that monthly monitoring at Outfall 007 is established in the permit.

Response:

The monitoring frequency for all parameters has been changed to Monthly as requested.

Comment # 7

Outfall 021 - Effective Date. Page 9 of the draft Lafarge permit indicates that the discharge authorization and monitoring for Outfall 021 is "effective from the date the plant modernization begins". Please establish language in the draft permit that more clearly describes the effective date (e.g. "effective from the date of groundbreaking on the plant modernization construction").

Response:

Effective date for all three outfalls (021,024,025) is same. The revised permit will indicate that the discharge authorization and monitoring requirement begin when the plan modernization is complete or in July 2016.

Comment # 8**Outfall 23A – Pathogen Criteria.**

Outfall 23A is an internal outfall at the Lafarge facility which eventually discharges into a segment of the Hudson River classified as a class C waterbody. NYSWQS at 6 NYCRR Part 701.8 specify that the best usage for class C waters is fishing and the waters shall be suitable for fish, shellfish, and wildlife propagation and survival and primary and secondary contact recreation.

The draft Lafarge permit establishes an effluent limitation for fecal coliforms for Outfall 23A but does not establish limits for total coliforms. The NYSWQS at 6 NYCRR Part 703.4 establishes water-quality criteria for fecal coliforms and total coliforms for facilities discharging to class C waters. As stated in the NYSWQS (6 NYCRR Part 701.1), the discharge of sewage, industrial waste, or other wastes shall not cause impairment of the best usages of the receiving water.

The Division of Water's Technical and Operational Guidance Series (TOGS) 1.3.3 – SPDES Permit Development for POTWs does not provide guidance for establishing an effluent limitation for total coliforms. However, the title page of TOGS 1.3.3 states that the document provides guidance to NYSDEC staff on how to ensure compliance with statutory and regulatory requirements and that nothing prevents staff from varying from the guidance as the specific facts and circumstances may dictate provided staff actions comply with applicable statutory and regulatory requirements. Additionally, the title page states that the guidance document is not a rule under the State Administrative Procedure Act section 102(2)(a)(i) and that the guidance does not create any enforceable rights for the benefit of any party. The NYSWQS clearly establish water quality standards for fecal and total coliforms.

In order to comply with the NYSWQS and ensure that the best usages of the receiving water are not impaired, please conduct a reasonable potential analysis for total coliforms and, if necessary, establish total coliforms effluent limitations for Outfalls 23A in the Lafarge permit.

Response:

Compliance with water quality standards for Total Coliforms is indicated by Fecal Coliforms limits. Additional limits for Total Coliforms are unnecessary, consistent with DEC's existing disinfection policy in TOGS 1.3.3. Parallel monitoring for total coliform would be redundant.

Comment # 9

Outfall 027 – Monitoring Requirement. The footnote for Outfall 027 on page 11 of the Lafarge permit states that monitoring for BOD₅, total residual chlorine, ammonia, and total phosphorous shall be required for 12 months starting from the effective date of the permit and the results will be submitted to NYSDEC. It is unclear whether monitoring of the parameters shall be continued for the remainder of the permit term after the initial 12-months of monitoring is complete.

Response:

This is a short term monitoring program specified for these parameters for 12 months from the EDPM.

Comment# 10**Special Monitoring.**

Page 22 of the fact sheet for the Lafarge permit states that special monitoring for groundwater and landfill leachate is required by the permit, however, these requirements are not established in the permit. Additionally, the fact sheet states that the landfill leachate monitoring is required at Outfall 03B but permit does not identify an Outfall 03B. Please ensure that all necessary special monitoring requirements are clearly established in the permit and that all outfalls are properly referenced and identified.

Response:

Special monitoring for the quench water (ground water) and CKD leachate, and runoff were completed in July 2011. The revised fact sheet has been updated to delete these items.

Outfall 03B is a typographical error. It should be Outfall 23B. Outfall 23B has already been listed on page 2 of 27 of the draft SPDES permit.

FACT SHEET NARRATIVE

Lafarge Building Materials, Inc.
Permit No.: NY 000 5037

Water Quality Engineer: Aslam Mirza
Permit Writer: Sudhir Mahatma
Date: July 2014

PROPOSED CHANGES (OUTFALL ADDITIONS, DELETIONS, AND RECONFIGURATIONS)

The permit is modified based on the request of December 20, 2012, and November 2013 from the facility. The facility will add new Cement Kiln Dust (CKD) leachate collection and wastewater treatment system and the treated wastewater will be discharged to the Hudson River via the outfall 023. The Sanitary Wastewater outfall 23A (previously identified as Outfall 022) will discharge to the Hudson River via Outfall 023. A new outfall 25A- Non Contact Cooling water is added to facilitate compliance with thermal criteria for Coeymans Creek.

Numerous changes are proposed for the existing outfalls at the Lafarge site under the RPM.

Outfall 003 - Does not include sanitary waste water, CKD leachate. Quarry pump out, and truck wash water. It now includes storm water outfalls 006 ,010, 021 and non contact cooling water outfall 25A. Outfall 25A is eliminated when Plant Modernization is complete.

Sanitary wastewater (now Outfall 23A) , CKD Leachate (now Outfall 23B) are no longer the components of the Outfall 003. Outfall 003 will be a storm water outfall when plant modernization is completed.

Outfalls 03C, 004, 005 and 011 are eliminated.

Outfall 23A is proposed to be a new outfall - treated sanitary wastewater (formerly a component of Outfall 003) that combines with treated CKD leachate and is discharged to the Hudson River via Outfall 023.

Outfall 23B is the treated CKD leachate (formerly a component of Outfall 003) before it mixes with treated Sanitary Wastewater outfall 23A. Formerly CKD leachate was discharged through Outfall 003.

Outfall 023 is proposed to be the new outfall designation by re-numbering current Outfall 23B (CKD landfill leachate), that combines with sanitary outfall 23A and discharged to the Hudson River.

Outfall 024 is a newly-proposed outfall for the discharge of storm water from the cement manufacturing area to Unnamed Tributary 1 of Coeyman's Creek. Storm water from this portion of the site is currently tributary to outfall 003.

Outfall 25A is a Non-Contact Cooling Water discharge to un-named trib.1 of Coeymans Creek. Formerly Non-Contact Cooling Water was discharged through outfall 003.

Outfall 025 is also a newly-proposed outfall for the discharge of storm water from the cement manufacturing

area to Unnamed Tributary 1 of Coeyman's Creek beginning July 2016.

Outfall 027 is a newly proposed outfall for discharge of storm water from quarry's truck unloading station and overland runoff to unnamed sub-tributary of Hannacroix Creek.

PERMIT HISTORY

This permit was renewed and modified on August 30, 2010 (effective date October 1, 2010) under the New York State Department of Environmental Conservation Division of Water's *Environmental Benefit Permit Strategy*. This permit renewal updated requirements and action levels for Whole Effluent Toxicity (WET) testing, updated outfall information and monitoring requirements for storm water discharges, incorporated a new schedule of compliance for addressing biological requirements (particularly for evaluating Best Technology Available or "BTA" for the cooling water intake), added new schedules of compliance for evaluating the existing quench water system and completion of storm water best management practices (BMPs), added a new schedule of compliance for investigating cement kiln dust (CKD) landfill leachate for potential future treatment, and added new requirements for developing a Mercury Minimization Plan (MMP).

This permit was modified again at the request of the permittee to reflect planned changes in operations and resulting discharges, referred to as the "Ravena Plant Modernization" or "RPM." The initial modification request was received 8/11/2010 and follow-up information and requests were received 9/8/2010 and 9/21/2010.

This permit was modified in Dec. 2012 at the request of the applicant to extend the date of initiation of the Impingement Mortality and Entrainment Characterization (IM/EC) Study which is required by the permit..

The permit was again modified in March 2013 at the request of the applicant to change the effective date for the final effluent thermal limits at Outfall 003 and the final effluent limits at Outfall 023 from October 1, 2012 to December 31, 2013. This permit was again revised based on the November 2013 request. A new outfall 25A is added to facilitate compliance with the thermal criteria for Coeymans Creek.

DESCRIPTION OF OPERATIONS

Lafarge currently uses a "wet" process for manufacturing Portland Cement. The company obtains the lime needed for the manufacturing process from an onsite limestone quarry, in accordance with a *Mined Land Reclamation* permit issued by the Department. Following quarrying of the limestone, it is ground and blended with other raw materials such as clay, sand, bauxite, iron, and water, to produce a slurry. The operation then uses a rotary kiln to heat the slurry to approximately 2650 degrees F, where chemical reactions produce "clinker." The clinker is then ground to a powder consistency and blended with certain amounts of gypsum to produce Portland Cement, a component of concrete. The final product is then shipped offsite via ship, rail, or trucks, mostly in bulk form but also in bagged form. Current production of clinker is approximately 1.72 million short tons per year.

However, as part of the RPM, Lafarge is re-designing and constructing an entirely new operation to convert to a “dry” manufacturing process. Changes from current operations for modernizing the process include removal of the two existing wet kilns and replacing these with a dry kiln, installation of a new Flue Gas Desulfurization Unit (FGD Unit) with a wet scrubber, and installation of a new Cogen Plant for generating 6 megawatts of energy for onsite use. The Cogen Unit will utilize a cooling tower from which all blowdown and demineralization plant wastewater will be returned to the process, resulting in complete recycling of all aqueous waste streams and the elimination of all industrial wastewater and cooling water discharges to surface waters.

APPLICABLE REGULATIONS

The Standard Industrial Code (SIC) which is applicable to the Lafarge process operation is 3241 – *Cement, Hydraulic*. Lafarge’s current treated process wastewater discharge at Outfall 003 is not categorically regulated at the federal level in accordance with 40 CFR 411 – CEMENT MANUFACTURING POINT SOURCE CATEGORY. The only industrial process which these categorical limits would apply to is the slurry tank makeup. But makeup water is currently evaporated in the kiln and is not discharged to any waters of the State. Consequently, current discharge limits are based on specific water quality considerations and Best Professional Judgement (BPJ).

Under the RPM, the slurry tank and required makeup water would be eliminated and cooling tower blowdown generated by the new operation will be recycled and not discharged. Therefore, 40 CFR 411 – CEMENT MANUFACTURING POINT SOURCE CATEGORY effluent guidelines would again not apply. Because there would be no discharge of wastewater subject to effluent guidelines under the RPM, limits for this RPM SPDES permit modification are based on specific water quality considerations and Best Professional Judgement (BPJ).

THERMAL AND BIOLOGICAL EVALUATIONS

6NYCRR Part 704 specifies criteria governing thermal discharges.

The Non Contact Cooling Water (NCCW) – Outfall 25A discharges through the Outfall 003 till June 2016. The Biological Factsheet will specify additional monitoring if any to protect the usage of Coeymans Creek - Class C(TS) during the period beginning with the effective date of this permit to June 2016. Outfall 25A – NCCW terminates in June 2016 or when the plant modernization is completed whichever is earlier. Thereafter the Outfall 003 is storm water and excess quarry water.

A **Biological Fact Sheet** included with this SPDES Fact Sheet describes Biological Requirements.

SPDES PERMIT FACT SHEET: Wastewater Data, Receiving Water Data, and Permit Limit Derivation.

(See last page of Fact Sheet for Explanatory Notes)

Date	July 2014
Permit Writers	Sudhir Mahatma
WQ Engineers	Aslam Mirza

(1) General Permittee Data:

Permit Number	Permittee Name	Facility Name	Location (C, T, V)	County	Industrial Code	Major/Sub Basin
NY 000 5037	Lafarge Building Materials, Inc.	Lafarge Building Materials, Inc.	Coeymans (T)	Albany	3241 (Cement, Hydraulic), 1422 (Crushed and Broken Limestone)	13/01

(2) Summary of Final Outfall Flow Rate(s) and Receiving Water Data:

Outfall Information					Receiving Water Information								
Outfall #	Latitude	Longitude	Flow Rate (MGD)		Name	Class	Water Index No.	For use by WQ Engineer - Critical Data					
	°, ‘, “	°, ‘, “	Average	Design or Maximum				7Q10 (MGD)	30Q10 (MGD)	Dilution/ Mixing	pH (SU)	Temp (°F)	Hardness (mg/l)
003	42 29 20	73 49 20	varies	3.0 Maximum 3.0 Design	Coeymans Creek	C(TS)	H-214	1.0	-	<1:1	7.5	-	100
006	42 29 62	73 49 06	Varies	1.8 Actual, 8.0 Design	Unnamed Tributary 1 to Coeymans Cr.	C	H-214-1	Intermittent	-	-	-	-	-
007	42 30 30	73 48 54	Varies	2.8 Actual, 36 Design	Coeymans Creek	C(TS)	H-214	1.0	-	<1.1	7.5	-	100
008	42 29 00	73 50 05	NA	NA	Unnamed Sub-Tributary to Hannacroix Creek	D	H-212-2-Trib	Int.	-	-	-	-	-

Outfall Information					Receiving Water Information								
Outfall #	Latitude	Longitude	Flow Rate (MGD)		Name	Class	Water Index Number	For use by WQ Engineer - Critical Data					
	° , ' , "	° , ' , "	Average	Design or Maximum				7Q10 (MGD)	30Q10 (MGD)	Dilution	pH (SU)	Temp (°C)	Hardness (mg/l)
010	42 29 28	73 49 26	2.6	5.2 Actual/ Design	Unnamed Tributary 1 to Coeymans Cr.	C	H-214-1	Intermittent	-	-	-	-	-
012	42 29 25	73 47 13	NA	NA	Hudson River	C	H	1940	2200	-	7.5	-	100
013	42 29 27	73 47 21	NA	NA	Hudson River	C	H	1940	2200	-	7.5	-	100
014	42 29 84	73 48 69	NA	NA	Coeymans Creek	C(TS)	H-214	1.0	-	-	7.5	-	100
015	42 29 79	73 49 40	NA	NA	Coeymans Creek	C(TS)	H-214	1.0	-	-	7.5	-	100
016	42 28 73	73 49 73	NA	NA	Coeymans Creek	C(TS)	H-214	1.0	-	-	7.5	-	100
017	42 28 75	73 49 74	NA	NA	Unnamed Trib. 1 to Coeymans Creek	C	H-214-1-Trib	Intermittent	-	-	7.5	-	100
018	42 29 62	73 49 06	NA	NA	Unnamed Constructed Trib. to Coeymans Creek	C	H-214-1-Trib	Intermittent	-	-	7.5	-	100
019	42 30 30	73 48 54	NA	NA	Coeymans Creek	C(TS)	H-214	1.0	-	-	7.5	-	100
020	40 29 31	73 48 59	NA	NA	Unnamed Tributary 1 to Coeymans Cr.	C	H-214-1	Intermittent	-	-	-	-	-
021	42 29 33	73 48 53	NA	NA	Unnamed Tributary 1 to Coeymans Cr.	C	H-214-1	Intermittent	-	-	-	-	-
23A Internal			0.005	0.014 Actual 0.015 Design	Hudson River via Outfall 023, before it mixes with Outfall 23B (Sanitary outfall connected to Outfall-023)	C							
23B Internal					Hudson River via Outfall 023 ,before it mixes with Outfall 23A								
023	42 29 27	73 47 10	0.09	0.120	Hudson River	C		Acute=50; Chronic=90; Use 90:1 dilution for TSS.				25	
024	42 29 35	73 48 47	NA	NA	Unnamed Tributary 1 to Coeymans Cr.	C	H-214-1	Intermittent	-	-	-	-	-
25A	42 29 50	73 48 41	NA	NA	Unnamed Tributary 1 to Coeymans Cr.	C	H-214-1	Intermittent	-	-	-	-	-

025	42 29 45	73 48 38	NA	NA	Unnamed Tributary 1 to Coeymans Cr.	C	H-214-1	Intermittent	-	-	-	-	-
027	42 28 45	73 49 43	NA	NA	Unnamed sub-tributary of Hannacroix Creek (Stormwater outfall)	C	H-212-2 (#538)	Intermittent					

Descriptions of Storm and Quarry Water Outfall Nos. 010 – 021, 024,025,027

Outfall 010 – Quarry water discharge to unnamed pond in Unnamed Tributary 1.

Outfall 012 – South drainage of the Hudson River waterfront draining just below the conveyor towers directly into the Hudson River.

Outfall 013 – Sheet drainage from the Gypsum piles draining into a channel west of the material piles at the Hudson River waterfront.

Outfall 014 – Roadside drainage from the east flowing into a culvert north of the bridge at crossing where the conveyor belt road and bridge intersect with the Coeyman’s Creek and NYS Thruway overpass.

Outfall 015 – Same general location as Outfall 014 but further west. Roadside flow where spur road crosses underneath conveyor belt. Accounts for storm water drainage from the west on the north side of the conveyor road.

Outfall 016 - Same general location as Outfall 014 but further west. Drainage from this outfall consolidates into a pair of culverts near a bridge, discharging into Coeyman’s Creek. Accounts for drainage from the west on the south side of the conveyor road.

Outfall 017 – South of the main plant, along main road. Near bone-yard where the road crosses over the unnamed constructed tributary which was created as part of the stream restoration project (Consent Order No. R-2004-0511, May 27, 2004) to divert site storm water away from Coeymans Creek. Accounts for runoff draining to the constructed tributary from the south.

Outfall 018 – Same general location as Outfall 017, but accounts for runoff draining into the unnamed constructed tributary from the north.

Outfall 019 – Same general location as Outfall 014.

Outfall 020 – Excess quarry water to unnamed pond in Unnamed Tributary 1.

Outfall 021 – Storm water from cement manufacturing area.

Outfall 024 – Storm water from cement manufacturing area.

Outfall 025 – Storm water from cement manufacturing area.

Outfall 027 – Storm water from quarry truck unloading station and overland runoff

Outfalls 021, 024, and 025 become active in July 2016 or when Plant Modernization is completed, whichever is earlier.

(3) Individual Outfall Data Summaries and Permit Limit Development:

Outfall	003
Source(s) of Wastewater	Non-contact cooling water (NCCW), storm water , and excess quarry water
Existing Wastewater Treatment Facilities	Stormwater Detention Pond, Settling Pond
EPA Point Source Category & Production Rate	Not applicable.

Effluent Parameter (Units) (Concentration Units - mg/l, ug/l or ng/l; Mass Units - lbs/d or g/d)	Existing Effluent Quality				Technology Based Effluent Limit					Water Quality Based Effluent Limit				Permit Basis (T or WQ)	WQ Notes
	Concentration		Mass					PQL		AWQC	Effluent				
	Ave/Max	95%/99%	Ave/Max	95%/99%	Conc.	Mass	Type	Conc.	Basis	Conc. (mg/l)	Conc. (mg/l)	Mass	Type		
WET TESTING					-					Recommended?		No			-
Flow Rate (MGD)- Discharge to Creek	Average varies		Maximum 3.0		Mon/Mon		MA/DM	-	R - BPJ	-	Mon OK	-	-	T	-
pH (su)	Minimum		Maximum		6.0 - 9.0		Range		R - BPJ	6.5 – 8.5	Tech Range OK	-	-	T	-
Solids, Total Suspended (mg/l)	19/28		680/1200		Mon/50	-	MA/DM	-	40CFR Part 411-C	Narrative 703.2	Tech OK	-	-	T	-
Solids, Settleable (ml/l)	-	-	-	-	Mon/0.1	-	MA/DM	-	R - BPJ	Narrative 703.2	Tech OK	-	-	T	-
Solids, Total Dissolved (mg/l)	-	-	-	-	Mon/Mon	-	MA/DM	-	R - BPJ	500	Mon OK	-	-	T	-
Oil & Grease (mg/l)	1.0/15	1.0/3.8	-	-	Mon/15	-	MA/DM	-	R - BPJ	Narrative 703.2	Tech OK	-	-	T	-
Mercury, Total (ng/l – EPA Method 1631)	28 ¹ /-	-	-	-	Mon/50	-	MA/DM	-	TOGS1.3.10	0.7 ng/l	50	-	-	MDV	-

1 - Special monitoring during RFI completion for the previous EBPS permit modification yielded this one-time result.

Outfall 003 (Continued)

Effluent Parameter (Units) (Concentration Units - mg/l, ug/l or ng/l; Mass Units - lbs/d or g/d)	Existing Effluent Quality				Technology Based Effluent Limit					Water Quality Based Effluent Limit				Permit Basis (T or WQ)	WQ Notes
	Temperature		Mass					PQL		AWQC	Effluent				
	Ave/Max	95%/99%	Ave/Max	95%/99%	Temp.	Mass	Type	Conc.	Basis	Conc.	Conc.	Mass	Type		
Temperature (Effluent, Deg F)	-	-	-	-	Monitor	-	DM	-	6NYCRR Part704.1	≤ 70° F	Monitor	-	-	T	2
Temperature, Upstream (U) ³	74/80.4	81.2/84.4	-	-	Mon	-	DM	-	R – WQ	≤ 70° F	≤ 70° F	-	-	T	3
Temperature, Downstream (D) ³	77/87	82.4/85.8	-	-	Mon	-	DM	-	R – WQ	-	-	-	-	T	3
Temperature Differential (ΔT = D - U) ³ (June – Sept.)	3.4/4.5	4.6/5.4	-	-	± 2.0	-	DM	-	704.2(b)(2)(ii), R 704.2(b)(2)(iv), R	ΔT ≤ +2° F ΔT ≤ -2° F	-	-	-	WQ WQ	2,3 2,3
Temperature Differential (ΔT = D - U) ³ (Oct. – May)	-	-	-	-	Mon	-	DM	-	704.2(b)(2)(iii), R	-	-	-	-	T	3
Temperature Differential (ΔT = D - U) ³ (Oct. – May)	-	-	-	-	5.0	-	DM	-	704.2(b)(2)(iii), R	ΔT ≤ 5° F	-	-	-	WQ	2,3
Temperature Differential (ΔT = Discharge - U) ³	13.6/21.7	18.0/20.8	-	-	Mon	-	DM	-	R - WQ	-	-	-	-	T	3

Footnotes

1 – “DM” = “Instantaneous Maximum”

2 - Delta T during the winter and summer months will be protective of the stream during the period beginning from the EDPM to June 2016. Biological Monitoring will specify any additional requirements , if any. Beginning July 2016. Outfall 003 will be storm water with excess quarry water.

3 – “U” = Upstream Temperature – Deg. F, “D” = Downstream Temperature – Deg. F

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Outfall	006
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Source(s) of Wastewater	Storm Water
Existing Wastewater Treatment Facilities	None
EPA Point Source Category & Production Rate	

Effluent Parameter (Units) (Concentration Units - mg/l, ug/l or ng/l; Mass Units - lbs/d or g/d)	Existing Effluent Quality				Technology Based Effluent Limit					Water Quality Based Effluent Limit				Permit Basis (T or WQ)	WQ Notes
	Concentration		Mass					PQL		AWQC	Effluent				
	Ave/Max	95%/99%	Ave/Max	95%/99%	Conc.	Mass	Type	Conc.	Basis	Conc. (mg/l)	Conc. (mg/l)	Mass	Type		
WET TESTING					NA					Recommended?		NO		-	-
Flow Rate, units = MGD	Average: 0.25		Maximum: 1.8		Mon/Mon		MA/DM	NA	R - BPJ	-	-	-	-	T	-
pH (su)	Minimum: 7.3		Maximum 8.0		6.0 – 9.0		Range		R - BPJ	6.0 – 9.5	Tech OK	-	-	T	-
Solids, Total Suspended (mg/l)	23/57	62/100	-	-	Mon/45	-	MA/DM	-	R - BPJ	Narrative – 703.2	Tech OK	-	-	T	-
Solids, Settleable (ml/l)	-	-	-	-	Mon/0.1	-	MA/DM	-	R - BPJ	Narrative – 703.2	Tech OK	-	-	T	-
Solids, Total Dissolved (mg/l)	1220	-	-	-	Mon/Mon	-	MA/DM	-	R - BPJ	500	Tech OK	-	-	T	@
Oil & Grease (mg/l)	1.0/1.1	1.1/1.1	-	-	Mon/15	-	MA/DM	-	R - BPJ	Narrative – 703.2	Tech OK	-	-	T	-

@ During storm (wet weather) events, the flow of the receiving water body significantly increases and may provide sufficient dilution to meet applicable Water Quality Standard.

Outfall 007

Source(s) of Wastewater	Storm water runoff from former clay mining area and CKD management.
Existing Wastewater Treatment Facilities	None
EPA Point Source Category & Production Rate	NA

Effluent Parameter (Units) (Concentration Units - mg/l, ug/l or ng/l; Mass Units - lbs/d or g/d)	Existing Effluent Quality				Technology Based Effluent Limit					Water Quality Based Effluent Limit				Permit Basis (T or WQ)	WQ Notes
	Concentration		Mass					PQL		AWQC	Effluent				
	Ave/Max	95%/99%	Ave/Max	95%/99%	Conc.	Mass	Type	Conc.	Basis	Conc. (mg/l)	Conc. (mg/l)	Mass	Type		
WET TESTING					NA					Recommended?		NO		-	-
Flow Rate, units = MGD	Average: 0.99		Maximum: 2.8		Mon/Mon		MA/DM	NA	R - BPJ	-	-	-	-	T	-
pH (su)	Minimum: 7.8		Maximum: 10		6.0 – 9.0		Range		R - BPJ	6.5 – 8.5	Tech OK	-	-	T	-
Solids, Total Suspended (mg/l)	13/22	27/37	-	-	25/45	-	MA/DM	-	R - BPJ	Narrative 703.2	Tech OK	-	-	T	-
Solids, Settleable (ml/l)	<0.1	-	-	-	Mon/0.1	-	MA/DM	-	R - BPJ	Narrative 703.2	Tech OK	-	-	T	-
Solids, Total Dissolved (mg/l)	2940	-	-	-	Mon/Mon	-	MA/DM	-	R - BPJ	500	Tech OK	-	-	T	@
Oil & Grease (mg/l)	1.1/1.6	1.5/1.7	-	-	Mon/15	-	MA/DM	-	R - BPJ	Narrative 703.2	Tech OK	-	-	T	-

@ During storm (wet weather) events, the flow of the receiving water body significantly increases and may provide sufficient dilution to meet applicable Water Quality Standard.

Outfall 008

Source(s) of Wastewater	Becraft Pond dewatering.
Existing Wastewater Treatment Facilities	None. Discharge to unnamed sub-tributary to Hannacroix Creek.
EPA Point Source Category & Production Rate	NA

Effluent Parameter (Units) (Concentration Units - mg/l, ug/l or ng/l; Mass Units - lbs/d or g/d)	Existing Effluent Quality				Technology Based Effluent Limit					Water Quality Based Effluent Limit				Permit Basis (T or WQ)	WQ Notes
	Concentration		Mass					PQL		AWQC	Effluent				
	Ave/Max	95%/99%	Ave/Max	95%/99%	Conc.	Mass	Type	Conc.	Basis	Conc. (mg/l)	Conc. (mg/l)	Mass	Type		
WET TESTING					NA					Recommended?		NO		-	-
Flow Rate, units = GPD	Average:	No data	Maximum:	No data	Mon/Mon	-	MA/DM	NA	R	-	-	-	-	T	1
pH (SU)	-	-	-	-	6.0 – 9.0	-	Range	-	R	6.0 – 9.5	-	-	-	T	1
Solids, Total Suspended (mg/l)	-	-	-	-	Mon/Mon	-	MA/DM	-	R	Narrative 703.2	Tech OK	-	-	T	1
Solids, Total Settleable (mg/l)	-	-	-	-	Mon/Mon	-	MA/DM	-	R	Narrative 703.2	Tech OK	-	-	T	1

Water Quality Analysis Notes

1. Rollover of current limits acceptable.

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Outfall	010
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Source(s) of Wastewater	Pre-modernization: Quarry pump out water and storm water that collects in quarry. Post-modernization: Storm water.
Existing Wastewater Treatment Facilities	None.
EPA Point Source Category & Production Rate	NA

Effluent Parameter (Units) (Concentration Units - mg/l, ug/l or ng/l; Mass Units - lbs/d or g/d)	Existing Effluent Quality				Technology Based Effluent Limit					Water Quality Based Effluent Limit				Permit Basis (T or WQ)	WQ Notes
	Concentration		Mass					PQL		AWQC	Effluent				
	Ave/Max	95%/99%	Ave/Max	95%/99%	Conc.	Mass	Type	Conc.	Basis	Conc.	Conc.	Mass	Type		
WET TESTING					NA					Recommended?		NO		-	-
Flow Rate, units = MGD	Average: 2.6		Maximum: 5.2		Mon/Mon		MA/DM	NA	R - BPJ	-	-	-	-	T	-
pH (su)	Minimum: No data		Maximum: No data		6.0 – 9.0		Range		R - BPJ	6.5 – 8.5		Tech OK			
Solids, Total Suspended (mg/l)	-	-	-	-	25/45	-	MA/DM	-	R - BPJ	Narrative 703.2	Tech OK		-	T	-
Solids, Total Suspended (mg/l)	-	-	-	-	Mon/50	-	MA/DM	-	40 CFR Part 411	Narrative 703.2	Tech OK		-	T	@
Solids, Settleable (ml/l)	-	-	-	-	Mon/0.1	-	MA/DM	-	R - BPJ	Narrative 703.2	Tech OK		-	T	-
Oil & Grease (mg/l)	-	-	-	-	Mon/15	-	MA/DM	-	R - BPJ	Narrative 703.2	Tech OK		-	T	-

@ Applicable after the plant modernization is complete and quarry water is no longer discharged to this outfall.

Outfall	012, 013*
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Source(s) of Wastewater	Storm Water - See Description of Storm Water Outfalls on Page 8
Existing Wastewater Treatment Facilities	None.
EPA Point Source Category & Production Rate	40 CFR 411, Subpart C – Materials Storage Piles Runoff Subcategory (Gypsum)

Effluent Parameter (Units) (Concentration Units - mg/l, ug/l or ng/l; Mass Units - lbs/d or g/d)	Existing Effluent Quality				Technology Based Effluent Limit					Water Quality Based Effluent Limit				Permit Basis (T or WQ)	WQ Notes
	Concentration		Mass					PQL		AWQC	Effluent				
	Ave/Max	95%/99%	Ave/Max	95%/99%	Conc.	Mass	Type	Conc.	Basis	Conc. (mg/l)	Conc. (mg/l)	Mass	Type		
pH (su)	Minimum -		Maximum -		6.0 – 9.0		Range		40 CFR 411.32, R	6.5 – 8.5	Tech OK	-	-	T	-
Solids, Total Suspended (mg/l)	-	-	-	-	Mon/50	-	MA/DM	-	40 CFR 411.32, R	Narrative 703.2	Tech OK	-	-	T	-
Solids, Settleable (ml/l)	-	-	-	-	Mon/0.1	-	MA/DM	-	R - BPJ	Narrative 703.2	Tech OK	-	-	T	-
Oil & Grease (mg/l)	-	-	-	-	Mon/15	-	MA/DM	-	R - BPJ	Narrative 703.2	Tech OK	-	-	T	-
Sulfate, Total (mg/l)	-	-	-	-	Mon/Mon	-	MA/DM	-	R - BPJ	-	Mon. OK	-	-	T	-
Sulfite, Total (mg/l)	-	-	-	-	Mon/Mon	-	MA/DM	-	R - BPJ	0.2	Mon. OK	-	-	T	-

* Numbered as “Outfall 101,” “Outfall 102,” and “Outfall 103” respectively, in May 4, 2009 Lafarge submittal of updated NY-2C.

Outfalls	014 thru 019 *
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Source(s) of Wastewater	Storm Water - See Description of Storm Water Outfalls on Page 8
Existing Wastewater Treatment Facilities	None.
EPA Point Source Category & Production Rate	NA

Effluent Parameter (Units) (Concentration Units - mg/l, ug/l or ng/l; Mass Units - lbs/d or g/d)	Existing Effluent Quality				Technology Based Effluent Limit					Water Quality Based Effluent Limit				Permit Basis (T or WQ)	WQ Notes
	Concentration		Mass					PQL		AWQC	Effluent				
	Ave/Max	95%/99%	Ave/Max	95%/99%	Conc.	Mass	Type	Conc.	Basis	Conc. (mg/l)	Conc. (mg/l)	Mass	Type		
pH (su)	Minimum -		Maximum -		6.0 – 9.0		Range		R - BPJ	6.5 – 8.5	Tech OK	-	-	T	-
Solids, Total Suspended (mg/l)	-	-	-	-	Mon/50	-	MA/DM	-	R - BPJ	Narrative 703.2	Tech OK	-	-	T	-
Solids, Settleable (ml/l)	-	-	-	-	Mon/0.1	-	MA/DM	-	R - BPJ	Narrative 703.2	Tech OK	-	-	T	-
Oil & Grease (mg/l)	-	-	-	-	Mon/15	-	MA/DM	-	R - BPJ	Narrative 703.2	Tech OK	-	-	T	-

* Numbered as “Outfall 104” thru “Outfall 109” respectively, in May 4, 2009 Lafarge submittal of updated NY-2C.

Outfalls	020
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Source(s) of Wastewater	Excess Quarry Water .
Existing Wastewater Treatment Facilities	None.
EPA Point Source Category & Production Rate	NA

Effluent Parameter (Units) (Concentration Units - mg/l, ug/l or ng/l; Mass Units - lbs/d or g/d)	Existing Effluent Quality				Technology Based Effluent Limit					Water Quality Based Effluent Limit				Permit Basis (T or WQ)	WQ Notes
	Concentration		Mass					PQL		AWQC	Effluent				
	Avg/Max	95%/99%	Avg/Max	95%/99%	Conc.	Mass	Type	Conc.	Basis	Conc. (mg/l)	Conc. (mg/l)	Mass	Type		
pH (su)	Minimum -8.0		Maximum - 8.7		6.0 – 9.0		Range		*	6.5 – 8.5	Tech OK	-	-	T	@
Flow	-	-	-	-	Mon/Mon	-	MA/DM	-	BPJ	-	-	-	-	T	-
Solids, Total Suspended (mg/l)	-	-	-	-	25/45	-	MA/DM	-	*	Narrative 703.2	Tech OK	-	-	T	-
Solids, Settleable (ml/l)	-	-	-	-	Mon/0.1	-	MA/DM	-	*	Narrative 703.2	Tech OK	-	-	T	-
Oil & Grease (mg/l)	-	-	-	-	Mon/15	-	MA/DM	-	*	Narrative 703.2	Tech OK	-	-	T	-

* - 1999 DEC Stone, Sand & Gravel guidance.

@ Available Internal Dilution allows for TBEL.

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Outfalls

021, 024, 025

Source(s) of Wastewater	Storm Water
Existing Wastewater Treatment Facilities	None.
EPA Point Source Category & Production Rate	NA

Effluent Parameter (Units) (Concentration Units - mg/l, ug/l or ng/l; Mass Units - lbs/d or g/d)	Existing Effluent Quality				Technology Based Effluent Limit					Water Quality Based Effluent Limit				Permit Basis (T or WQ)	WQ Notes
	Concentration		Mass					PQL		AWQC	Effluent				
	Avg/Max	95%/99%	Avg/Max	95%/99%	Conc.	Mass	Type	Conc.	Basis	Conc. (mg/l)	Conc. (mg/l)	Mass	Type		
pH (su)	Minimum -		Maximum -		6.0 – 9.0		Range		*	6.5 – 8.5	Tech OK	-	-	T	-
Flow	-	-	-	-	Mon/Mon	-	MA/DM	-	BPJ	-	-	-	-	T	-
Solids, Total Suspended (mg/l)	-	-	-	-	25/45	-	MA/DM	-	*	Narrative 703.2	Tech OK	-	-	T	-
Solids, Total Suspended (mg/l) For Outfall 024 only	-	-	-	-	Mon/50	-	MA/DM	-	40 CFR Part 411	Narrative 703.2	Tech OK	-	-	T	@
Solids, Settleable (ml/l)	-	-	-	-	Mon/0.1	-	MA/DM	-	*	Narrative 703.2	Tech OK	-	-	T	-
Solids, Total Dissolved (mg/l)	-	-	-	-	Mon/Mon	-	MA/DM	-	*	500	Tech OK	-	-	T	-
Oil & Grease (mg/l)	-	-	-	-	Mon/15	-	MA/DM	-	*	Narrative 703.2	Tech OK	-	-	T	-

@ For Outfall 024 only

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Outfalls

25A

Source(s) of Wastewater	Non Contact Cooling Water
Existing Wastewater Treatment Facilities	None.
EPA Point Source Category & Production Rate	NA

Effluent Parameter (Units) (Concentration Units - mg/l, ug/l or ng/l; Mass Units - lbs/d or g/d)	Existing Effluent Quality				Technology Based Effluent Limit					Water Quality Based Effluent Limit				Permit Basis (T or WQ)	WQ Notes	
	Concentration		Mass					PQL		AWQC		Effluent				
	Avg/Max	95%/99%	Avg/Max	95%/99%	Conc.	Mass	Type	Conc.	Basis	Conc. (mg/l)	Conc. (mg/l)	Mass	Type			
pH (su)	Minimum	6.5	Maximum	- 8.5	6.0 – 9.0		Range		TOGS 1.2.1	703.3	6.5 – 8.5		-	WQ		
Flow MGD	0.8 / 1.0	-	-	-	Mon/Mon	-	MA/DM	-	BPJ	-	-	-	-	T	-	
Temperature Deg F	/ <90				Mon		DM		BPJ	704.2	90			WQ		
Solids, Total Suspended (mg/l)	/ 10	-	-	-	Mon/Mon	-	MA/DM	-	TOGS 1.2.1	Narrative 703.2	Tech OK	-	-	T	-	
Solids, Total Dissolved (mg/l)	/ 1400	-	-	-	Mon/Mon	-	MA/DM	-	TOGS 1.2.1	500	Tech OK	-	-	T	1	
Solids, Settleable (ml/l)	-	-	-	-	Mon/Mon	-	MA/DM	-	TOGS 1.2.1	Narrative 703.2	Tech OK	-	-	T	-	
Oil & Grease (mg/l)	/ < 1.0	-	-	-	No Monitoring Required. Detected below the level of concern			-	TOGS 1.2.1	Narrative 703.2	Tech OK	-	-		-	

Foot Notes:

- 1.0 The source of cooling water is directly from the Hudson River. TDS of this magnitude (1400 mg/l) is not expected. High TDS are attributed to recycled cooling water while sampling. 95%le concentration of TDS in the Hudson River Water used as NCCW is 164 mg/l based on 2008-2013 RIBS data (Station# 13010139). Therefore monitoring only for TDS is acceptable.

Outfalls	027
Source(s) of Wastewater	Storm Water - See Description of Storm Water Outfalls on Page 8
Existing Wastewater Treatment Facilities	None. (Discharge to unnamed trib. of Hannacroix Creek/C)
EPA Point Source Category & Production Rate	NA

Effluent Parameter (Units) (Concentration Units - mg/l, ug/l or ng/l; Mass Units - lbs/d or g/d)	Existing Effluent Quality				Technology Based Effluent Limit					Water Quality Based Effluent Limit				Permit Basis (T or WQ)	WQ Notes
	Concentration		Mass					PQL		AWQC	Effluent				
	Avg/Max	95%/99%	Avg/Max	95%/99%	Conc.	Mass	Type	Conc.	Basis	Conc. (mg/l)	Conc. (mg/l)	Mass	Type		
pH (su)	Minimum	- 8.0	Maximum	- 8.7	6.0 – 9.0		Range		*	6.5 – 8.5		-	-	WQ	-
Flow	-	-	-	-	Mon/Mon	-	MA/DM	-	BPJ	-	-	-	-		-
Solids, Total Suspended (mg/l)	54/114	-	-	-	25/45	-	MA/DM	-	*	Narrative 703.2	-Apply TBEL			T	-
Solids, Settleable (ml/l)	/ 0.2	-	-	-	Mon/0.1	-	MA/DM	-	*	Narrative 703.2	-Apply TBEL			T	-
Solids, Total Dissolved (mg/l)	78/160	-	-	-	Mon/Mon	-	MA/DM	-	*	500	500	-	-	WQ	-
Oil & Grease (mg/l)	/ 1.6	-	-	-	Mon/15	-	MA/DM	-	*	Narrative 703.2	-Apply TBEL			T	-

Effluent Parameter (Units) (Concentration Units - mg/l, ug/l or ng/l; Mass Units - lbs/d or g/d)	Existing Effluent Quality				Technology Based Effluent Limit					Water Quality Based Effluent Limit				Permit Basis (T or WQ)	WQ Notes
	Concentration		Mass					PQL		AWQC	Effluent				
	Avg/Max	95%/99%	Avg/Max	95%/99%	Conc.	Mass	Type	Conc.	Basis	Conc. (mg/l)	Conc. (mg/l)	Mass	Type		
BOD5 mg/l	2.6/3.1				Mon / 20		MA/DM		TOGS 1.2.1 Atch:C	5 mg/l			DM	WQ	
TRC ug/l	/ 30				Mon/200		MA/DM	20	TOGS 1.2.1 Atch:C	5 ug/l	5		DM	PQL	
Total Organic Nitrogen mg/l	/ 4.6				No Std.					----	---			---	
Ammonia (as N) mg/l	0.4/0.5				Mon/20		MA/DM		TOGS 1.2.1 Atch:C	1.5 / 2. 2 mg/l	1.5/2/2		DM	WQ	
TKN mg/l	/5.0				No Std.					-----	----			---	
Phosphorous, Total ug/l	60 /80				No Std.					1 mg/l	1000 ug/l		DM	WQ	

* - 1999 DEC Stone, Sand & Gravel guidance.

Outfall	23A																		
Source(s) of Wastewater					Treated sanitary wastewater to Hudson River via Outfall 023														
Existing Wastewater Treatment Facilities					Two 10,000 gal. septic tanks followed by two 10-foot diameter Bioclere trickling filter units, sodium hypochlorite disinfection														
EPA Point Source Category & Production Rate					NA														
Effluent Parameter (Units) (Concentration Units - mg/l, ug/l or ng/l; Mass Units - lbs/d or g/d)	Existing Effluent Quality				Technology Based Effluent Limit						Water Quality Based Effluent Limit				Permit Basis (T or WQ)	WQ Notes			
	Concentration		Mass					PQL		AWQC	Effluent								
	Ave/Max	95%/99%	Ave/Max	95%/99%	Conc.	Mass	Type	Conc.	Basis	Conc. (mg/l)	Conc. (mg/l)	Mass	Type						

WET TESTING					NA					Recommended?		NO		-	-	
Flow Rate, units = MGD	Average 0.005		Maximum 0.014		Mon/Mon		MA/DM		NA	R - BPJ	-	-	-	-		-
pH (su)	Minimum 6.2		Maximum 8.5		6.0 –9.0		Range		R – Secondary Treatment		6.5-8.5	Apply TBEL – High Dilution		T	-	
BOD ₅ (mg/l)	-	-	-	-	30/45	-	MA/DM		-	R – Secondary Treatment	DO= 4.0	Effluent Limited- Apply TBEL		T	-	
Dissolved Oxygen (mg/l)	-	-	-	-							DO= 4.0	2.0	-----	Min.	WQ	-
Solids, Total Suspended (mg/l)	-	-	-	-	30/45	-	MA/DM		-	R – Secondary Treatment	Narrative Std. Part 703.2		Apply TBEL		T	-
Solids, Settleable (ml/l)	-	-	-	-	Mon/0.1	-	MA/DM		-	R – Secondary Treatment.					T	-
Ammonia, NH3 (mg/l) summer winter	-	-	-	-	-	-			-	-	1.5/2.2	Discharge is limited to 20mg/l-BPJ		MA	WQ	-
Coliform, Fecal (CFU)	20/720	22/370	-	-	200/400	-	30-DayGM/ 7-Day GM		-	R - WQ	200	200	-	30D-GM	WQ/T	-
Chlorine, Total Residual (ug/l)	0.0/7.6	-	-	-	M/2000	-	MA/DM		20	R - BPJ	5	450	-	DM	WQ	-

Outfall	23B											
Source(s) of Wastewater			CKD Landfill Leachate before mixing with Outfall 23A									
Existing Wastewater Treatment Facilities			Neutralization, Equalization, Ultrafiltration ,Mercury Polishing									
EPA Point Source Category & Production Rate			NA									
Effluent Parameter (Units)			Existing Effluent Quality			Technology Based Effluent Limit			Water Quality Based Effluent Limit		Permit	

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(Concentration Units - mg/l, ug/l or ng/l; Mass Units - lbs/d or g/d)	Concentration		Mass					PQL		AWQC	Effluent			Basis (T or WQ)	WQ Notes
	Ave/Max	95%/99%	Ave/Max	95%/99%	Conc.	Mass	Type	Conc.	Basis	Conc.	Conc.	Mass	Type		
WET TESTING					NA										
Flow Rate, units = MGD	Ave: 0.09		Max: 0.120		Mon/Mon		DA/DM	-							
pH (su)	Minimum: No Data		Maximum: No Data		6.0 – 9.0		MA/DM		TOGS 1.2.1						
Solids, Total Suspended (mg/l)	/ < 30	-	-	-	Mon/20	-	MA/DM	-	TOGS1.2.1 C ;BPJ						
Solids, Settleable (ml/l)	---	-	-	-	Monitor	-	MA/DM	-	R – BPJ ³						
Solids, Total Dissolved (mg/l)	/ < 500	-	-	-	Monitor	-	MA/DM	-	R - BPJ						
Sulfates, Total (mg/l)	/ 3627	-	-	-	Monitor	-	MA/DM	-	R - BPJ						
Chloride (ug/l)	/ 857				No Std.										
Sodium (ug/l)	/ 1347				No Std.										
Potassium (ug/l)	/ 6726				No Std.										
Aluminum, Total (mg/l)	/ < 0.2	-	-	-	2.0/4.0	-	MA/DM	-	TOGS 1.2.1, Att C						
Arsenic, Total (ug/l)	/ < 5.0	-	-	-	No Mon	-		-	TOGS 1.2.1						
Molybdenum, Total (ug/l)	/ 99				No Mon.		----		TOGS 1.2.1						
Mercury, Total (ng/l)	- < 50	-	-	-	Mon/50	-	MA/DM	-	TOGS 1.3.10						

Outfall

023

Source(s) of Wastewater	CKD Landfill Leachate and Outfall 23A to Hudson River														
Existing Wastewater Treatment Facilities	Neutralization, Equalization, Ultrafiltration ,Mercury Polishing														
EPA Point Source Category & Production Rate	NA														
Effluent Parameter (Units) (Concentration Units - mg/l, ug/l or ng/l; Mass Units - lbs/d or g/d)	Existing Effluent Quality				Technology Based Effluent Limit					Water Quality Based Effluent Limit				Permit Basis (T or WQ)	WQ Notes
	Concentration		Mass					PQL		AWQC	Effluent				
	Ave/Max	95%/99%	Ave/Max	95%/99%	Conc.	Mass	Type	Conc.	Basis	Conc.	Conc.	Mass	Type		
WET TESTING					NA					Recommended?		YES		WQ	-
Flow Rate, units = MGD	Ave: 0.09		Max: 0.120		Mon/Mon		DA/DM	-		-	-	-	-	T	-
pH (su)	Minimum: No Data		Maximum: No Data		6.0 – 9.0		MA/DM		TOGS 1.2.1	6.5-8.5	Apply TBEL – High Dilution			T	-
Solids, Total Suspended (mg/l)	/ < 30	-	-	-	Mon/20	-	MA/DM	-	TOGS1.2.1 C ;BPJ	Narrative Std. Part 703.2		Apply TBEL		T	-
Solids, Settleable (ml/l)	---	-	-	-	Monitor	-	MA/DM	-	R – BPJ ³					T	-
Solids, Total Dissolved (mg/l)	/ < 500	-	-	-	Monitor	-	MA/DM	-	R - BPJ	500	32,000 @	---	DM	WQ	-
Sulfates, Total (mg/l)	/ 3627	-	-	-	Monitor	-	MA/DM	-	R - BPJ	-	-	-	-		-
Chloride (ug/l)	/ 857				No Std.					See TDS	-	-	-		
Sodium (ug/l)	/ 1347				No Std.					See TDS	-	-	-		
Potassium (ug/l)	/ 6726				No Std.					See TDS	-	-	-		
Aluminum, Total (mg/l)	/ < 0.2	-	-	-	2.0/4.0	-	MA/DM	-	TOGS 1.2.1, Att C	100 Ionic	Apply TBEL –TOGS 1.3.1.E			T	@
Arsenic, Total (ug/l)	/ < 5.0	-	-	-	Monitor	-	MA/DM	-	R - BPJ	150	13500.0	-	DM	WQ	-
Molybdenum, Total (ug/l)	/ 99				Monitor		MA/DM		TOGS 1.2.1	N0 std./Guidance Value				T	
Mercury, Total (ng/l)	- < 50	-	-	-	Mon/50	-	MA/DM	-	R - WQ	0.7 ng/l	0.7 ng/l	-	MA	WQ/MDV	-
WET – Acute Invertebrate	-	-	-	-	-	-	-	-	-	None	15		AL	WQ	-
WET - Acute Vertebrate	-	-	-	-	-	-	-	-	-	None	15		AL	WQ	-
WET – Chronic Invertebrate	-	-	-	-	-	-	-	-	-	None	90		AL	WQ	-
WET – Chronic Vertebrate	-	-	-	-	-	-	-	-	-	None	90		AL	WQ	-

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1 - This outfall will now be discharged to the Hudson River. @ 143 mg/l is background conc. WQBEL = (500-143) (90) = 32,130 mg/l

@ Use of WTC- Aquamark 120 requires limit for this parameter.

(4) Additional Issues:

Water Quality Based Effluent Limits (WQBELs):

New York State water quality regulations (for surface waters) are implemented by applying the Total Maximum Daily Load (TMDL) process to watersheds, drainage basins or waterbody segments on a pollutant specific basis. The analysis determines if there is a "reasonable potential" that the discharge of a pollutant will result in exceedance of ambient water quality criteria (AWQC). If there is a reasonable potential for an exceedance of AWQC, the TMDL is used to establish waste load allocations for point sources and load allocations for nonpoint sources of the pollutant. For point sources, the waste load allocations are translated to WQBELs for inclusion in SPDES permits. Reference - TOGS 1.3.1, USEPA Guidance for Water Quality - Based Decisions: The TMDL Process, 40 CFR 130 and the Clean Water Act 303(d).

Statistics:

The statistical methods utilized are consistent with TOGS 1.2.1 and the USEPA, Office of Water, Technical Support Document For Water Quality-based Toxics Control, March 1991, Appendix E. They are generally based on lognormal analysis. If other data distributions such as normal or delta-lognormal are utilized it is noted below. Statistical calculations were not performed for parameters with insufficient data. Generally, ten or more data points are needed to calculate percentiles. Two or more data points are necessary to calculate an Average and a Maximum. Non-detects were included in the statistical calculations at the reported detection limit unless otherwise noted.

Monitoring data collected during the following time period was used to calculate statistics:

Thermal data: June 2006 - September 2008 - 9,341 data points

Conventional pollutants: May 2006 – July 2009

This data was taken from the following source(s):

Thermal data: Arithmetic means - Permittee Percentile ranks: DMRs (SPDES Information System or "SIS")

Conventional pollutants: SIS

Internal Waste Stream Monitoring:

40 CFR 122.45(h)(1) allows the permit authority to monitor and limit parameters at internal locations when controlling them solely at the final outfall is impractical or infeasible. Dilution of a process wastewater with large volumes of cooling water and/or storm water is one example of when the use of an internal monitoring point is justified. Monitoring at the following internal outfalls is necessary for the reasons specified:

Outfall 03A, Re-Numbered Outfall 022, now renumbered as 23A – To maintain sanitary effluent limits and compliance with applicable criteria, before commingling with and dilution from other waste streams.

Outfall 03B, Re-Numbered Outfall 023, now renumbered as Outfall 23B – To monitor leachate quality and level of potential toxic contaminants, before commingling with and dilution from other waste streams.

After CKD Leachate Treatment System becomes fully operational, Outfall 023 (combination of Outfalls 23A and 23B) will be discharged to Hudson River.

WET Testing:

Testing is required, in accordance with TOGS 1.3.2, for the following reasons: Chronic testing recommended by *Toxicity Testing Unit* due to low stream/effluent dilution ratio and potential pollutants for Outfall 023.

Indicator Parameters:

In accordance with 40 CFR 122.44(e)(2), The permit writer has determined that effective treatment and/or acceptable performance for specific parameters is indicated by one or more other parameters which are limited and therefore a decision has been made to not limit or monitor these specific parameters. This judgement is based on the similarity between this and the regulated parameter(s) and historical data where available. The use of indicator parameters is not appropriate for WQBELs. Following is a list of the affected parameters: None.

Schedules of Compliance:

Biological Studies: Additional requirements related to biological studies have been added to the permit to consider requirements under the RPM.

Storm Water Best Management Practices (BMPs): As specified during the August 30, 2010 permit modification, the permittee must complete all storm water BMP work which was itemized in a letter from facility Environmental Manager John Reagan to Andrea Dzierwa of the Department's Region 4 Office, dated May 30, 2008, within 8 months of the EDPM.

Pollutant Minimization Program

A Mercury Minimization Program (MMP) was added to the permit during the previous modification, dated August 30, 2010, since the WQBEL of 0.7 ng/L is lower than the permit limit of 50 ng/L. The goal of the PMP is to meet the calculated WQBEL to reduce Mercury effluent levels pursuant of the calculated WQBEL. Periodic monitoring; an acceptable control strategy which will become enforceable under the permit; and the submission of annual reports shall be required under the PMP. The PMP may be subject to modification as needed.

Biological Fact Sheet - Cooling Water Intake Structure
Bureau of Habitat, Steam Electric Unit

Name of Facility: Lafarge Building Materials, Inc.
Owner/Operator: Lafarge Building Materials, Inc.
SPDES #: NY-000 5037
Location: Albany, New York
 Ravena, New York
 Hudson River

1. Description of Facility

Lafarge Building Materials, Inc. (“Lafarge”) operates a cement manufacturing facility on the west shore of the Hudson River in the village of Ravena. Currently, the facility uses a “wet” cement-making process at the Ravena Plant. Part of this process includes the operation of a once-through cooling system, withdrawing water from the Hudson for cooling purposes and for use in the cement manufacturing process.

Lafarge has proposed to modernize the facility with a more energy efficient “dry” cement-making process. The facility upgrade will include replacing the current once-through cooling water system with a new closed-cycle glycol cooling water system. In addition to modernizing its cement-manufacturing process, Lafarge will install a steam-turbine driven cogeneration plant to recover waste heat generated from the kilns. The cogeneration plant will use a closed-cycle cooling system to condense steam. Make-up water for the cooling towers will be supplied by ground water, quarry water, and during drought conditions, Hudson River water. Blow-down from the tower will be recycled for the flue-gas desulfurization system, in order to avoid a thermal discharge to Coeymans Creek.

Description of current operations

The Lafarge cooling water intake structure (CWIS) is located approximately 150’ from the shoreline. The CWIS is a benthic “T” shaped structure, and is positioned about three feet from the water’s surface at mean low water. Each end of the “T” has an opening covered with 3/4” screen. Under current operations, two pumps, each rated at 3,000 gallons per minute, can withdraw a maximum of 8.6 million gallons per day (MGD) of cooling water from the Hudson, however, the average water withdrawal is about 2.4 MGD. The cooling water flows from the river to the pump house. At the pump house, the cooling water is filtered through one 3/8” mesh traveling screen. Fish and debris impinged upon the traveling screen are washed into a collection tray and then deposited in an on-site disposal area. The cooling water is then pumped to a spherical reservoir located on top of one of the facility buildings. Other water sources, such as quarry water, storm water and recycled plant water supplement the cooling water stored in the reservoir. After being used in facility processes, the water flows through a series of settling ponds where it is chlorinated, adjusted for pH, and finally discharged into Coeymans Creek.

Description of modernized operations

Lafarge will replace the “wet” manufacturing process with a “dry” process, reducing the amount of water needed in the manufacturing process. The current non-contact cooling system will also be replaced by a closed-loop, glycol cooling system, eliminating the need for Hudson River water for the

glycol cooling system. As a result of using closed-cycle cooling, the current thermal discharge to Coeymans creek will be eliminated.

The new cogeneration plant will be cooled with a cooling tower, however the tower will require make-up water to replace water lost due to evaporation and blow-down. The primary sources of the cooling water will be quarry and well water. As mentioned above, the plant will continue to use the existing intake structure to withdraw up to 2 MGD of Hudson River water in the event that quarry and well water volume is insufficient. This scenario is not predicted to occur on an annual basis, and will likely not exceed a three month duration. Finally, the discharge from the cooling tower will be recycled for the flue gas desulfurization system, and will not be discharged into Coeymans creek.

Lafarge will install 0.5 mm cylindrical wedge wire screens at the intake, in addition to using closed-cycle cooling and alternative primary water sources. These screens will nearly eliminate impingement mortality and further reduce entrainment from that achieved with closed-cycle cooling.

2. Ecological Resource

The Hudson River in the vicinity of the intake structure is fresh water tidal and is classified as a Class C water body. The best usage of Class C waters includes fishing, and such waters shall support fish propagation and survival. The water quality shall also be suitable for primary and secondary contact recreation, although other factors may limit the use for these purposes. At the discharge location, Coeymans Creek is classified as a Class C(TS) waterbody, meaning that this section of the creek is trout spawning waters. Any water quality standard, guidance value, or thermal criterion that specifically refers to trout, trout spawning, trout waters, or trout spawning waters applies to Coeymans Creek in the vicinity of the discharge.

Impingement and entrainment studies have not been performed at the Lafarge facility. However, studies in the Hudson River in the vicinity of the CWIS show that fish species expected in the area include (but are not limited to): shortnose sturgeon, Atlantic sturgeon, striped bass, white perch, American shad, alewife, blueback herring, American eel, gizzard shad, spottail shiner, largemouth bass, smallmouth bass, white catfish, tessellated darter and yellow perch. Eggs, larvae and juvenile shortnose and Atlantic sturgeon occur in the Hudson River near Lafarge (Bain 1997). Blue crab can also be found in this location. Lafarge used existing ichthyoplankton survey data to estimate the number of organisms potentially impinged and entrained by the CWIS (ASA 2004). Based upon actual water usage data, Lafarge estimated approximately 870,800 organisms are entrained annually. Using the calculation baseline of 8 MGD, Lafarge estimated approximately 4.5 million organisms could be entrained annually. No impingement data exists at this time for this facility, however impingement mortality is 100 percent, as fish collected from the screens are deposited on-site, and not returned to the river.

3. Alternatives Evaluated

As a condition of the SPDES permit, Lafarge submitted a *Design, Construction and Technology Review* ("DCTR"). The DCTR provided a summary analysis of technologies and operational measures than can minimize impingement and entrainment. The following technologies were determined to be feasible at Lafarge, and were evaluated in detail:

1. Closed-cycle Cooling: full and partial retrofit;

2. Cylindrical Wedgewire Screens (“CWWS”) with 0.5, 1.0 and 2.0 mm slot-width;
3. Aquatic filter barrier (AFB);
4. Ristroph traveling screen (3/8”) with fish return system;
5. Fine-mesh (≤ 5 mm mesh size) ristroph traveling screen with fish return; and
6. Variable speed drive pumps.

4. Discussion of Best Technology Available

According to 6 NYCRR Part 704.5 - *Intake Structures* and Section 316(b) of the federal Clean Water Act, the location, design, construction, and capacity of cooling water intake structures must reflect the “best technology available” (BTA) for minimizing adverse environmental impact. The identification of BTA is a technology driven determination, however, the final decision may also consider cost.

Feasibility of Closed-cycle Cooling

The DCTR addressed closed-cycle cooling for the current facility and its cooling demands. Lafarge determined that the costs of closed-cycle cooling, compared to the costs of other technologies, made both a full and partial retrofit unavailable. However, due to the reduced cooling water needs for the upgraded facility, closed-cycle cooling for the facility is an available option.

A. Location.—The location of the CWIS will remain in its current location with the installation of cooling towers for the facility.

B. Design. – Changes in design of the intake to accommodate cooling towers will include installation of 0.5 mm CWWS on the current intake manifold.

C. Construction. – Adverse construction impacts will be limited to a loss of some aquatic habitat on the river bottom in the vicinity of the CWWS intake manifold and support system.

D. Capacity. – With the upgrade of the facility and operation of cooling towers, capacity will be reduced from the permitted maximum of 8 MGD to a maximum of 2 MGD. As described above, quarry water and well water will be the primary sources of cooling water. Hudson River water will only be required when these water sources will not meet the needs of the facility.

Alternative technologies other than Closed-cycle Cooling

A. Location. - Lafarge did not provide any information that would indicate relocation of the CWIS would minimize impingement and entrainment of aquatic organisms.

B. Design. –AFB, Ristroph traveling screens, fine mesh traveling screens and CWWS would change the design of the intake structure by providing a physical barrier to organisms. The fish return system would return fish impinged on the traveling screens to the river. Variable speed pumps and lesser capacity pumps would change the design by altering the volume of cooling water flow.

Lafarge indicated that an AFB would not be feasible for several reasons: the AFB would be significantly more expensive than CWWS; during the months when the AFB was not deployed, there would be no technology in place to prevent organisms from entering the intake structure; there are additional

operational and maintenance expenses associated with AFB that would not be required by CWWS; and the AFB would not be more effective at reducing entrainment than 0.5 mm CWWS. Therefore, the aquatic filter barrier was not considered further in the BTA determination.

The Ristroph and fine-mesh screens with a fish return system would reduce impingement mortality of fish. However, these two screening options would cost more than CWWS, and would not provide the reductions in impingement and entrainment mortality that could be achieved with 0.5mm CWWS and closed-cycle cooling. Therefore, the Ristroph and fine-mesh traveling screens with a fish return system were not considered further in the BTA determination.

Variable speed pumps (“VSP”) would not provide appreciable reductions in impingement and entrainment compared to closed-cycle cooling with limiting the maximum flow to 2 MGD through intermittent use of cooling water pumps. Therefore, VSP were not considered in further detail.

CWWS are a proven technology at other facilities. Lafarge conducted a 0.5 mm and 1.0 mm CWWS feasibility study, and determined that 0.5 mm copper-nickel alloy wedgewire screens, combined with air-burst cleaning, is a feasible option for minimizing impingement and entrainment mortality at the modernized facility.

C. Construction. – Construction impacts of installing 0.5 mm CWWS include a minor loss of aquatic habitat on the river bottom in the vicinity of the CWWS intake manifold and support system.

D. Capacity. – The use of cooling towers, and depending on quarry water and well water as primary cooling water sources will reduce the amount of Hudson river water required for cooling purposes, from 8 MGD to a maximum of 2 MGD.

5. Determination of Best Technology Available

After evaluating all of the available alternatives, the New York State Department of Environmental Conservation has agreed with Lafarge that, in combination, the following technologies meet the requirements of 6 NYCRR § 704.5 and the performance goals of Commissioner Policy #52: closed-cycle glycol cooling for the cement manufacturing process, closed-cycle cooling for the cogeneration plant, 2 MGD maximum capacity, alternative primary water sources, and installation of 0.5 mm CWWS at the existing CWIS. In addition to reductions in impingement and entrainment, recycling of the cooling tower blow-down to the facility’s air pollution control system will eliminate the thermal discharge to Coeymans Creek.

In keeping with the Department’s established, environmentally-protective BTA requirements, a 100 percent reduction in impingement mortality and approximately 97 percent reduction in entrainment, from calculation baseline level, are the minimum impact reductions the Department expects to be achieved from implementation of these technologies at the Lafarge facility.

6. Monitoring Requirements

In accordance with Biological Monitoring Requirement No. 3 of the SPDES permit, the permittee must submit *Annual Water Use Summary Reports*, documenting the amount of Hudson River water withdrawn for the previous year, and that withdrawal of river water is less than 2 MGD.

7. Legal Requirements

The requirements for the cooling water intake structure in this State Pollutant Discharge Elimination System permit are consistent with the policies and requirements embodied in the New York State Environmental Conservation Law, in particular - Sec.1-0101.1.; 1-0101.2.; 1-0101.3.b., c.; 1-0303.19.; 3-0301.1.b., c., i., s. and t.; 11-0107.1; 11-0303.; 11-0535.2; 11-1301.; 11-1321.1.; 17-0105.17.; 17-0303.2., 4.g.; 17-0701.2., and the rules thereunder, specifically 6NYCRR Part 704.5, Section 316(b) CWA, and Commissioner Policy #52.

8. Summary of Proposed Permit Changes

Deletions

Permit Condition	Reason for Deletion
Biological Monitoring Requirements 1	Impingement Mortality and Entrainment Characterization Study is no longer required, based upon BTA determination
Biological Monitoring Requirements 2, 3	Requirements have been met
Biological Monitoring Requirements 4-10	Conditions require rewriting based on the Department's BTA determination.

Additions

Permit Condition	Requirements
Biological Monitoring Requirement 1	Requires permittee to install and implement BTA technologies and operational measures by July 1, 2016
Biological Monitoring Requirement 2	Requires submission of <i>Technology Installation and Operation Plan</i> (TIOP) required to implement BTA.
Biological Monitoring Requirement 3	Requires submission of annual reports documenting Hudson River cooling water use.
Biological Monitoring Requirement 4	Requires maintenance of records for a minimum of 10 years from EDP.
Biological Monitoring Requirement 5	Requires submission of status reports.
Biological Monitoring Requirement 6	Requires no modifications made to the intake structure without prior Department approval.

9. References

6 NYCRR §701.25, 701.8, <http://www.dec.ny.gov/regs/4592.html>

6 NYCRR Part 704.5 www.dec.ny.gov/regs

ASA 2004. 2002 Hudson River Year Class Report. October 2004.

Bain M.B. (1997). Atlantic and short nose sturgeons of the Hudson River: common and divergent life

history attributes. Environ. Biol. of Fishes 48: 347-358.

Commissioner Policy # 52. Best Technology Available (BTA) for Cooling Water Intake Structures. Issued July 10, 2011. http://www.dec.ny.gov/docs/fish_marine_pdf/btapolicyfinal.pdf

HDR (2013). Lafarge Ravena Plant Wedge-Wire Intake Screen Feasibility Study FINAL REPORT – Amended October 2013 Henningson, Durham & Richardson Architecture and Engineering, P.C. in association with HDR Engineering Inc.

HDR (2010). Draft Environmental Impact Statement- Ravena Plant Modernization Project. March 2010. Henningson, Durham & Richardson Architecture and Engineering, P.C. in association with HDR Engineering Inc.

Document prepared by Colleen E. Kimble and last revised on July 21, 2014

(6) Explanatory Notes:

Please note that some of these terms are not applicable to every Fact Sheet.

AL - Action level calculated in accordance with TOGS 1.2.1 (non POTWs) and TOGS 1.3.3 (POTWs). See the permit for a complete definition.

AVG or Av - Average. The arithmetic mean.

AWQC - Ambient water quality criteria for the receiving water. The applicable standard, guidance value or estimated value in accordance with TOGS 1.1.1, TOGS 1.3.1 and 6NYCRR 700-705.

Basis - The technical analysis, internal guidance, regulation and/or law upon which an effluent limit or monitoring requirement is proposed.

BAT - Best Available Technology Economically Achievable in accordance with TOGS 1.2.1 (non POTWs) and TOGS 1.3.3 (POTWs), 40 CFR 125, 6NYCRR 750, ECL 17-0811 and the Clean Water Act.

BCT - Best Conventional Control Technology in accordance with TOGS 1.3.4, 40 CFR 125, 6NYCRR 750, ECL 17-0811 and the Clean Water Act.

BPJ - Best Professional Judgement in accordance with TOGS 1.2.1 (non POTWs) and TOGS 1.3.3 (POTWs), 40 CFR 122 and 125, 6NYCRR 750, ECL 17-0811 and the Clean Water Act.

BPT - Best Practicable Control Technology in accordance with TOGS 1.2.1, 40 CFR 125, 6NYCRR 750, ECL 17-0811 and the Clean Water Act.

Conc. - Concentration in units of mg/l, ug/l or ng/l.

D - Daily.

Design Flow - Treatment system design capacity as noted in an approved engineering report.

Final - Final permit requirements. A level of performance that must be achieved according to a schedule specified in either the permit or a consent order.

g/d - Grams per day.

GM - Geometric mean.

GW - Groundwater effluent limitation developed in accordance with TOGS 1.2.1 (non-POTWs), TOGS 1.3.3 (POTWs), TOGS 1.1.2 and 6NYCRR 703.

Ind - Indicated parameter. See definition in section (4).

Int - Intermittent

Interim - Interim permit period requirements. A level of performance that must be achieved while improvements are being implemented in order to achieve final permit period requirements.

lbs/d or #/d - Pounds per day.

Mass - Mass discharge in units of #/d or g/d discharge.

Max or Mx - The maximum value.

MGD - Million gallons per day.

mg/l - Milligrams per liter.

Dilution/Mixing - Used to determine dilution available in receiving waters. For lakes, estuaries and slowly flowing rivers and streams, mixing zone dilution is generally assumed to be 10:1 unless data is available to indicate otherwise.

Model - Calibrated water quality model applied in accordance with TOGS 1.3.1.

Mon - Monitor only.

NA - The characteristics of this parameter and the reported discharge levels do not justify routine monitoring or a limit. Also indicates "not applicable".

ND - Non-Detect.

ng/l - Nanograms per liter. 1000 ng/l = 1 ug/l = 0.001 mg/l.

PQL - The DEC published or site specific practical quantitation limit; the concentration in wastewater at which analytical results are thought to be accurate to within approximately plus or minus thirty percent.

R - "Rolled Over", i.e. the specific requirement in this permit is equivalent to the previous permit. R(T) is roll over of a technology based requirement and R(WQ) is roll over of a WQBEL.

Range - The discharge is limited to a range of effluent values, e.g. a pH limit of (6.0-9.0) SU.

RREL - EPA's Risk Reduction Engineering Laboratory treatability database.

T - Technology based effluent limit or requirement.

TOGS - Technical and Operational Guidance Series. Internal guidance to permit drafters used by the NYSDEC Division of Water to aid in permit drafting.

Copies of these guidance documents may be obtained from the internet at <http://www.dec.state.ny.us/website/dow/togs/index.htm>.

ug/l - Micrograms per liter. 1000 ug/l = 1 mg/l.

WET- Whole Effluent Toxicity (testing). See TOGS 1.3.2.

WQ - Water quality.

WQBEL - Water quality-based effluent limit. See information in section (4).

7Q10 - Minimum average 7 consecutive day flow at a recurrence interval of 10 years. Applicable to evaluations involving aquatic health based AWQC.

30Q10 - Minimum average 30 consecutive day flow at a recurrence interval of 10 years. Applicable to evaluations involving human health based AWQC.

95% - The 95th percent confidence interval for the historical effluent data used to draft the permit.

99% - The 99th percent confidence interval for the historical effluent data used to draft the permit.

133 - Secondary treatment requirements in accordance with TOGS 1.3.3, 40 CFR 133, 6NYCRR 750, ECL 17-0509 and the Clean Water Act.

+ - These parameters represent scans. Detections vary among the compounds which are included in the scans. The listed value represent the maximum detected level of any compound in the scan.



NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
State Pollutant Discharge Elimination System (SPDES)
DISCHARGE PERMIT

Industrial Code: 3241
Discharge Class (CL): 03
Toxic Class (TX): T
Major Drainage Basin: 13
Sub Drainage Basin: 01
Water Index Number: H-214-1
Compact Area:

SPDES Number: NY 000 5037
DEC Number: 4-0124-00001/00057
Effective Date (EDP): October 1, 2010
Expiration Date (ExDP): September 30, 2015
Modification Dates:(EDPM) July 19, 2011
May 1, 2012
November 1, 2012
August 14, 2014

This SPDES permit is issued in compliance with Title 8 of Article 17 of the Environmental Conservation Law of New York State and in compliance with the Clean Water Act, as amended, (33 U.S.C. §1251 et.seq., hereinafter referred to as "the Act").

PERMITTEE NAME AND ADDRESS

Name: Lafarge Building Materials, Inc.
Street: P.O. Box 3
City: Ravena

Attention: Environmental Manager

State: NY Zip Code: 12143

is authorized to discharge from the facility described below:

FACILITY NAME AND ADDRESS

Name: Lafarge Building Materials, Inc.
Location (C,T,V): Coeymans (T)
Facility Address: Route 9W
City: Ravena

County: Albany

State: NY Zip Code: 12143

NYTM -E:

NYTM - N:

From Outfall No.: 023 at Latitude: 42 ° 29 ' 27 '' & Longitude: 73 ° 47 ' 10 ''

into receiving waters known as: Hudson River

Class: C

and; (list other Outfalls, Receiving Waters & Water Classifications)
(See next page)

in accordance with: effluent limitations; monitoring and reporting requirements; other provisions and conditions set forth in this permit; and 6 NYCRR Part 750-1.2(a) and 750-2.

DISCHARGE MONITORING REPORT (DMR) MAILING ADDRESS

Mailing Name: Lafarge North America
Street: P.O. Box 3
City: Ravena

State: NY Zip Code: 12143

Responsible Official or Agent: Environmental Manager

Phone: (518) 756-5026

This permit and the authorization to discharge shall expire on midnight of the expiration date shown above and the permittee shall not discharge after the expiration date unless this permit has been renewed, or extended pursuant to law. To be authorized to discharge beyond the expiration date, the permittee shall apply for permit renewal not less than 180 days prior to the expiration date shown above.

DISTRIBUTION:

CO BWP - Permit Coordinator
Regional Water Engineer
Regional Permit Administrator
EPA Region II - Michelle Josilo

Permit Administrator: Nancy M. Baker	
Address: 1130 North Westcott Road Schenectady, NY 12306	
Signature: <i>Nancy M. Baker</i>	Date: 08/14/2014

ADDITIONAL OUTFALLS

Outfall No.	Description	Latitude/Longitude	Receiving Water/Class
003	Non-contact cooling water (NCCW), storm water	42° 29' 47" / 73° 48' 23"	Coeymans Creek/C(TS)
006	Storm water	42° 29' 37" / 73° 49' 02"	Unnamed Tributary 1 to Coeymans Creek/C
007	Storm water – Clay mining area, CKD landfill leachate.	42° 30' 17" / 73° 48' 32"	Coeymans Creek/C(TS)
008	Becraft Pond Dewatering	42° 29' 37" / 73° 50' 05"	Unnamed Sub Trib. to Hannacroix Creek/D
010	Pre-modernization: Quarry pumpout water and storm water. Post-modernization: Storm water.	42° 29' 28" / 73° 49' 26"	Tributary 1 to Coeymans Creek/C
012	Storm water	42° 29' 24" / 73° 47' 14"	Hudson River/C
013	Storm water	42° 29' 24" / 73° 47' 18"	Hudson River/C
014	Storm water	42° 29' 32" / 73° 48' 04"	Coeymans Creek/C(TS)
015	Storm water	42° 29' 38" / 73° 48' 10"	Coeymans Creek/C(TS)
016	Storm water	42° 29' 33" / 73° 48' 06"	Coeymans Creek/C(TS)
017	Storm water	42° 29' 29" / 73° 48' 47"	Unnamed Trib 1 to Coeymans Creek
018	Storm water	42° 29' 28" / 73° 48' 49"	Unnamed Constructed Trib to Coeymans Creek
019	Storm water	42° 29' 30" / 73° 48' 03"	Coeymans Creek/C(TS)
020	Quarry water	42° 29' 31" / 73° 48' 59"	Unnamed Tributary 1 to Coeymans Creek/C
021	Storm water	42° 29' 33" / 73° 48' 53"	Unnamed Tributary 1 to Coeymans Creek/C
23A	Treated Sanitary wastewater (formerly known as outfall 03A and 022)	Internal Outfall	Tributary to Outfall 003 prior to completion of CKD leachate treatment facility. Completion of new CKD leachate treatment system ,the receiving water is Hudson River/C after it mixes with Outfall 23B.
23B	CKD leachate prior to mixing with Outfall 23A	Internal Outfall	Mixes with Outfall 23A and discharges to Hudson River / C
023	CKD leachate (formerly known as outfall 03B) and treated sanitary wastewater	42° 29' 27" / 73° 47' 10"	Tributary to outfall 003 prior to new CKD leachate treatment system. Completion of new CKD leachate treatment system, it is discharged to Hudson River/C
024	Storm water	42° 29' 35" / 73° 48' 47"	Unnamed Tributary 1 to Coeymans Creek/C
025	Storm water	42° 29' 45" / 73° 48' 38"	Unnamed Tributary 1 to Coeymans Creek/C
25A	Non-Contact Cooling Water	42° 29' 50" / 73° 48' 41"	Unnamed Trib. to Coeymans Creek / C
027	Storm water	42° 28' 45" / 73° 49' 43"	Unnamed trib. of trib. 2 of Hannacroix Creek/C

Outfalls 021, 024, 025 become active in July 2016 or when Plant Modernization is complete, whichever is earlier.

NOTE: Decommissioning of any outfall that involve equipment must be in accordance with 6 NYCRR Part 750-2.11.

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OUTFALL	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING	
	This cell describes the type of wastewater authorized for discharge. Examples include process or sanitary wastewater, storm water, non-contact cooling water.	This cell lists classified waters of the state to which the listed outfall discharges.	The date this page starts in effect. (e.g. EDP or EDPM)	The date this page is no longer in effect. (e.g. ExDP)	
PARAMETER	MINIMUM	MAXIMUM	UNITS	SAMPLE FREQ.	SAMPLE TYPE
e.g. pH, TRC, Temperature, D.O.	The minimum level that must be maintained at all instants in time.	The maximum level that may not be exceeded at any instant in time.			

PARAMETER	EFFLUENT LIMIT	PRACTICAL QUANTITATION LIMIT (ML)	ACTION LEVEL	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE
	Limit types are defined below in Note 1. The effluent limit is developed based on the more stringent of technology-based standards, required under the Clean Water Act, or New York State water quality standards. The limit has been derived based on existing assumptions and rules. These assumptions include receiving water hardness, pH and temperature; rates of this and other discharges to the receiving stream; etc. If assumptions or rules change the limit may, after due process and modification of this permit, change.	For the purposes of compliance assessment, the analytical method specified in the permit shall be used to monitor the amount of the pollutant in the outfall to this level, provided that the laboratory analyst has complied with the specified quality assurance/quality control procedures in the relevant method. Monitoring results that are lower than this level must be reported, but shall not be used to determine compliance with the calculated limit. This ML can be neither lowered nor raised without a modification of this permit.	Action Levels are monitoring requirements, as defined below in Note 2, that trigger additional monitoring and permit review when exceeded.	This can include units of flow, pH, mass, Temperature, concentration. Examples include µg/l, lbs/d, etc.	Examples include Daily, 3/week, weekly, 2/month, monthly, quarterly, 2/yr and yearly.	Examples include grab, 24 hour composite and 3 grab samples collected over a 6 hour period.

Note 1: DAILY DISCHARGE: The discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for the purposes of sampling. For pollutants expressed in units of mass, the 'daily discharge' is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the 'daily discharge' is calculated as the average measurement of the pollutant over the day. **DAILY MAX:** The highest allowable daily discharge. **DAILY MIN:** The lowest allowable daily discharge. **MONTHLY AVG (daily avg):** The highest allowable average of daily discharges over a calendar month, calculated as the sum of each of the daily discharges measured during a calendar month divided by the number of daily discharges measured during that month. **RANGE:** The minimum and maximum instantaneous measurements for the reporting period must remain between the two values shown. **7 DAY ARITHMETIC MEAN (7 day average):** The highest allowable average of daily discharges over a calendar week. **12 MRA (twelve month rolling avg):** The average of the most recent twelve month's monthly averages. **30 DAY GEOMETRIC MEAN (30 d geo mean):** The highest allowable geometric mean of daily discharges over a calendar month, calculated as the antilog of : the sum of the log of each of the daily discharges measured during a calendar month divided by the number of daily discharges measured during that month. **7 DAY GEOMETRIC MEAN (7 d geo mean):** The highest allowable geometric mean of daily discharges over a calendar week.

Note 2: ACTION LEVELS: Routine Action Level monitoring results, if not provided for on the Discharge Monitoring Report (DMR) form, shall be appended to the DMR for the period during which the sampling was conducted. If the additional monitoring requirement is triggered as noted below, the permittee shall undertake a short-term, high-intensity monitoring program for the parameter(s). Samples identical to those required for routine monitoring purposes shall be taken on each of at least three consecutive operating and discharging days and analyzed. Results shall be expressed in terms of both concentration and mass, and shall be submitted no later than the end of the third month following the month when the additional monitoring requirement was triggered. Results may be appended to the DMR or transmitted under separate cover to the same address. If levels higher than the Action Levels are confirmed, the permit may be reopened by the Department for consideration of revised Action Levels or effluent limits. The permittee is not authorized to discharge any of the listed parameters at levels which may cause or contribute to a violation of water quality standards. The additional monitoring requirement is triggered upon receipt by the permittee of any monitoring results in excess of the stated Action Level.

PERMIT LIMITS, LEVELS AND MONITORING

OUTFALL No.	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
003	Non-contact cooling water (NCCW), storm water	Coeymans Creek	EDPM	ExDP

PARAMETER *	LIMIT		UNIT S	SAMPLE FREQUENCY	SAMPLE TYPE	FOOTNOTES (FN)
	EFFLUENT INSTANTANEOUS MINIMUM	INSTANTANEOUS MAXIMUM				
pH	6.0	9.0	SU	2/Week	Grab	
Temperature (T) – Effluent		Monitor	° F	Continuous	Recorder	
Temperature (T) - Upstream (U) of Outfall in Stream		Monitor	° F	Continuous	Recorder	
Temperature (T) – Downstream (D) of Outfall in Stream		Monitor	° F	Continuous	Recorder	
$\Delta T = U$ minus D: June 1 – September 30		± 2.0	° F	Continuous	Recorder	
$\Delta T = D$ minus U: October 1 – May 31		5.0	° F	Continuous	Recorder	
$\Delta T =$ Outfall temp. minus U		Monitor	° F	Continuous	Recorder	

PARAMETER	EFFLUENT LIMIT		ACTION LEVEL	UNIT S	SAMPLE FREQUENCY	SAMPL E TYPE	FN
	Monthly Average	Daily Maximum					
Flow	Monitor	Monitor		MGD	Daily	Instantaneous	
Solids, Total Suspended	Monitor	50		mg/l	2/Week	Grab	
Solids, Settleable	Monitor	0.1		ml/l	2/Week	Grab	
Solids, Total Dissolved	Monitor	Monitor		mg/l	2/Week	Grab	
Oil & Grease	Monitor	15		mg/l	2/Week	Grab	
Mercury, Total	Monitor	50		ng/l	Quarterly	Grab	2

* ΔT = Temperature Differential

PERMIT LIMITS, LEVELS AND MONITORING

OUTFALL No.	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
006	Storm Water Runoff and Storm Water from Pond south of Main Entrance	Unnamed Trib 1 to Coeymans Creek	11/01/2012	ExDP

PARAMETER	MINIMUM	MAXIMUM	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FOOTNOTES (FN)
pH	6.0	9.0	SU	Quarterly	Grab	

PARAMETER	EFFLUENT LIMIT or CALCULATED LEVEL		ACTION LEVEL		UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FN
	Monthly Average	Daily Maximum						
Flow	Monitor	Monitor			GPD	Quarterly	Instantaneous	4
Solids, Total Suspended	25	45			mg/l	Quarterly	Grab	
Solids, Settleable	Monitor	0.1			ml/l	Quarterly	Grab	
Solids, Total Dissolved	Monitor	Monitor			mg/l	Quarterly	Grab	4
Oil & Grease	Monitor	15			mg/l	Quarterly	Grab	

OUTFALL No.	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
007	Storm Water from Former Clay Mining Area and CKD Management	Coeymans Creek	11/01/2012	ExDP

PARAMETER	MINIMUM	MAXIMUM	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FOOTNOTES (FN)
pH	6.0	9.0	SU	Monthly	Grab	

PARAMETER	EFFLUENT LIMIT or CALCULATED LEVEL		ACTION LEVEL		UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FN
	Monthly Average	Daily Maximum						
Flow	Monitor	Monitor			GPD	Monthly	Instantaneous	4
Solids, Total Suspended	25	45			mg/l	Monthly	Grab	
Solids, Settleable	Monitor	0.1			ml/l	Monthly	Grab	
Solids, Total Dissolved	Monitor	Monitor			mg/l	Monthly	Grab	4
Oil & Grease	Monitor	15			mg/l	Monthly	Grab	

PERMIT LIMITS, LEVELS AND MONITORING

OUTFALL No.	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
008	Becraft Pond Dewatering	Unnamed Sub-Trib. to Hannacroix Creek	10/01/2010	ExDP

PARAMETER	MINIMUM	MAXIMUM	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FOOTNOTES (FN)
pH	6.0	9.0	SU	Per Discharge	Grab	

PARAMETER	EFFLUENT LIMIT or CALCULATED LEVEL		ACTION LEVEL		UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FN
	Monthly Average	Daily Maximum						
Flow	Monitor	Monitor			GPD	Per Discharge	Instantaneous	
Solids, Total Suspended	25	45			mg/l	Per Discharge	Grab	
Solids, Settleable	Monitor	0.1			ml/l	Per Discharge	Grab	

OUTFALL No.	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
010	Pre-modernization: Quarry Pumpout Water and Storm Water. Post-modernization: Storm Water.	Unnamed Trib 1 to Coeymans Creek	11/01/2012	ExDP

PARAMETER	MINIMUM	MAXIMUM	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FOOTNOTES (FN)
pH	6.0	9.0	SU	Quarterly	Grab	

PARAMETER	EFFLUENT LIMIT or CALCULATED LEVEL		ACTION LEVEL		UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FN
	Monthly Average	Daily Maximum						
Flow	Monitor	Monitor			MGD	Quarterly	Instantaneous	
Solids, Total Suspended	25	45			mg/l	Quarterly	Grab	
Solids, Total Suspended	Monitor	50			mg/l	Quarterly	Grab	3
Solids, Settleable	Monitor	0.1			ml/l	Quarterly	Grab	
Oil & Grease	Monitor	15			mg/l	Quarterly	Grab	

PERMIT LIMITS, LEVELS AND MONITORING

OUTFALL No.	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
012, 013	Storm Water – Near Gypsum Pile	Hudson River	10/01/2010	ExDP

PARAMETER	MINIMUM	MAXIMUM	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FOOTNOTES (FN)
pH	6.0	9.0	SU	Quarterly	Grab	

PARAMETER	EFFLUENT LIMIT or CALCULATED LEVEL		ACTION LEVEL		UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FN
	Monthly Average	Daily Maximum						
Flow	Monitor	Monitor			GPD	Quarterly	Estimated	
Solids, Total Suspended	Monitor	50			mg/l	Quarterly	Grab	
Solids, Settleable	Monitor	0.1			ml/l	Quarterly	Grab	
Sulfite, Total	Monitor	Monitor			mg/l	Quarterly	Grab	
Sulfate, Total	Monitor	Monitor			mg/l	Quarterly	Grab	
Oil & Grease	Monitor	15			mg/l	Quarterly	Grab	

OUTFALL No.	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
014, 015, 016, 019	Storm Water – Roadside Drainage Near and Under Conveyor Belt	Coeymans Creek	10/01/2010	ExDP

PARAMETER	MINIMUM	MAXIMUM	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FOOTNOTES (FN)
pH	6.0	9.0	SU	Quarterly	Grab	

PARAMETER	EFFLUENT LIMIT or CALCULATED LEVEL		ACTION LEVEL		UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FN
	Monthly Average	Daily Maximum						
Solids, Total Suspended	Monitor	50			mg/l	Quarterly	Grab	
Solids, Settleable	Monitor	0.1			ml/l	Quarterly	Grab	
Oil & Grease	Monitor	15			mg/l	Quarterly	Grab	

PERMIT LIMITS, LEVELS AND MONITORING

OUTFALL No.	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
017, 018	Storm Water – Along Main Road	Unnamed Trib 1 to Coeymans Creek - 017 and Unnamed Constructed Trib (Restoration) - 018	10/01/2010	ExDP

PARAMETER	MINIMUM	MAXIMUM	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FOOTNOTES (FN)
pH	6.0	9.0	SU	Quarterly	Grab	

PARAMETER	EFFLUENT LIMIT or CALCULATED LEVEL		ACTION LEVEL	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FN
	Monthly Average	Daily Maximum					
Solids, Total Suspended	Monitor	50		mg/l	Quarterly	Grab	
Solids, Settleable	Monitor	0.1		ml/l	Quarterly	Grab	
Oil & Grease	Monitor	15		mg/l	Quarterly	Grab	

OUTFALL No.	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
020	Excess Quarry Water	Unnamed Trib 1 to Coeymans Creek	Sept. 2014	ExDP

PARAMETER	MINIMUM	MAXIMUM	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FOOTNOTES (FN)
pH	6.0	9.0	SU	Quarterly	Grab	

PARAMETER	EFFLUENT LIMIT or CALCULATED LEVEL		ACTION LEVEL	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FN
	Monthly Average	Daily Maximum					
Flow	Monitor	Monitor		MGD	Quarterly	Instantaneous	
Solids, Total Suspended	25	45		mg/l	Quarterly	Grab	
Solids, Settleable	Monitor	0.1		ml/l	Quarterly	Grab	
Oil & Grease	Monitor	15		mg/l	Quarterly	Grab	

PERMIT LIMITS, LEVELS AND MONITORING

OUTFALL No.	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
021, 025 024	Storm water from cement manufacturing area Storm water – Material Storage Pile Area	Unnamed Trib 1 to Coeymans Creek	@@	ExDP

PARAMETER	MINIMUM	MAXIMUM	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FOOTNOTES (FN)
pH	6.0	9.0	SU	Monthly	Grab	

PARAMETER	EFFLUENT LIMIT		ACTIONLEVEL		UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FN
	Monthly Average	Daily Maximum						
Flow	Monitor	Monitor			GPD	Monthly	Instantaneous	
Solids, Total Suspended	25	45			mg/l	Monthly	Grab	
Solids, Total Suspended	Monitor	50			mg/l	Monthly	Grab	##
Solids, Settleable	Monitor	0.1			ml/l	Monthly	Grab	
Solids, Total Dissolved	Monitor	Monitor			mg/l	Monthly	Grab	
Oil & Grease	Monitor	15			mg/l	Monthly	Grab	

@@ - Discharge authorization and monitoring requirement for outfalls 021, 024 and 025 begin when the plant modernization is complete or in July 2016 whichever is earlier.

- Applicable to Outfall 024 only (according to 40 CFR Part 411 Cement Manufacturing Point Source Category).
Outfall 024 is monitored for other parameters similar to Outfalls 021 and 025.

PERMIT LIMITS, LEVELS AND MONITORING

OUTFALL No.	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
25A	Non Contact Cooling Water	Unnamed Trib 1 to Coeymans Creek	EDPM	6/30/2016

PARAMETER	MINIMUM	MAXIMUM	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FOOTNOTES (FN)
pH	6.5	8.5	SU	Weekly	Grab	

PARAMETER	EFFLUENT LIMIT or CALCULATED LEVEL		ACTION LEVEL		UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FN
	Monthly Average	Daily Maximum						
Flow	Monitor	Monitor			MGD	Weekly	Instantaneous	
Temperature	Monitor	90			Deg F	Weekly	Grab	
Solids, Total Suspended	Monitor	Monitor			mg/l	Weekly	Grab	
Solids, Settleable	Monitor	Monitor			ml/l	Monthly	Grab	
Solids, Total Dissolved	Monitor	Monitor			mg/l	Monthly	Grab	@

Note: This outfall is planned to be terminated in June 2016 or when plant modernization is complete, whichever is earlier. Beginning July 2016, Outfall 025 will consist of storm water only.
If applicable, Biological Monitoring will specify additional requirements to protect the usages of Coeymans Creek during the time period of EDPM to June 2016.

@ Monitor Weekly for 10 weeks and submit the data to RWE as requested by the USEPA.

PERMIT LIMITS, LEVELS AND MONITORING

OUTFALL No.	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
027	Storm water from quarry's truck unloading station and overland runoff	Unnamed sub-trib. to Hannacroix Creek	EDPM	ExDP

PARAMETER	MINIMUM	MAXIMUM	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FOOTNOTES (FN)
pH	6.5	8.5	SU	Monthly	Grab	

PARAMETER	EFFLUENT LIMIT		ACTIONLEVEL		UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FN
	Monthly Average	Daily Maximum						
Flow	Monitor	Monitor			GPD	Monthly	Instantaneous	
Solids, Total Suspended	25	45			mg/l	Monthly	Grab	
Solids, Settleable	Monitor	0.1			ml/l	Monthly	Grab	
Solids, Total Dissolved	Monitor	Monitor			mg/l	Monthly	Grab	
Oil & Grease	Monitor	15			mg/l	Monthly	Grab	
BOD5	Monitor	Monitor			mg/l	Monthly	Grab	\$\$
TRC	Monitor	Monitor			ug/l	Monthly	Grab	\$\$
Ammonia (as NH3)	Monitor	Monitor			mg/l	Monthly	Grab	\$\$
Phosphorous, Total	Monitor	Monitor			mg/l	Monthly	Grab	\$\$

\$\$ - Monitor these parameters only for 12 months from the effective date of this permit and submit the results to the RWE and BWP.

PERMIT LIMITS, LEVELS AND MONITORING

OUTFALL No.	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
23A	Treated Sanitary Wastewater before it mixes with Outfall 23B	Hudson River via Outfall 023	EDPM	ExDP

PARAMETER	MINIMUM	AVERAGE	MAXIMUM	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FOOTNOTES (FN)
pH	6.0	-	9.0	SU	Weekly	Grab	

PARAMETER	EFFLUENT LIMIT		ACTION LEVEL		UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FN
	Monthly Average	Daily Maximum						
Flow	Monitor	Monitor			GPD	Continuous	Recorder	
BOD ₅	30	45			mg/l	Weekly	Grab	
Solids, Total Suspended	30	45			mg/l	Weekly	Grab	
Solids, Settleable	Monitor	0.1			ml/l	Weekly	Grab	
Ammonia, as N	Monitor	20			mg/l	Weekly	Grab	
Coliform, Fecal	200	400			#/100 ml	Weekly	Grab	
Chlorine, Total Residual	Monitor	2000			ug/l	Daily	Grab	

PERMIT LIMITS, LEVELS AND MONITORING

OUTFALL No.	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
23B	CKD Leachate before it mixes with Outfall 23A	Hudson River via Outfall 023	EDPM	ExDP

PARAMETER	MINIMUM	AVERAGE	MAXIMUM	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FOOTNOTES (FN)
pH	6.0	-	9.0	SU	Weekly	Grab	

PARAMETER	EFFLUENT LIMIT		ACTION LEVEL		UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FN
	Monthly Average	Daily Maximum						
Flow	Monitor	Monitor			GPD	Continuous	Recorder	
Solids, Total Dissolved	Monitor	Monitor			mg/l	Monthly	Grab	
Solids, Total Suspended	Monitor	20			mg/l	Weekly	Grab	
Solids, Settleable	Monitor	0.1			ml/l	Weekly	Grab	
Sulfates, Total	Monitor	Monitor			mg/l	Monthly	Grab	
Aluminum, Total	2000	4000			ug/l	Monthly	Grab	
Mercury, Total	Monitor	50			ng/l	Quarterly	Grab	2

OUTFALL No.	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
023	CKD Leachate and sanitary wastewater	Hudson River	EDPM	ExDP

PARAMETER	MINIMUM	MAXIMUM	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FOOTNOTES (FN)
pH	6.0	9.0	SU	Weekly	Grab	
DO	2.0	Monitor	mg/l	Weekly	Grab	

PARAMETER	EFFLUENT LIMIT		ACTION LEVEL		UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FN
	Monthly Average	Daily Maximum						
Flow	Monitor	Monitor			GPD	Continuous	Recorder	
Solids, Total Suspended	Monitor	20			mg/l	Monthly	Grab	
Solids, Total Dissolved	Monitor	32,000			mg/l	Weekly	Grab	
Aluminum, Total	2000	4000			ug/l	Monthly	Grab	
Molybdenum, Total	Monitor	Monitor			ug/l	Monthly	Grab	

PARAMETER	EFFLUENT LIMIT		ACTION LEVEL		UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FN
	Monthly Average	Daily Maximum						
Chlorine , Total Residual	Monitor	450			ug/l	Weekly	Grab	
WET – Acute Invertebrate			15		TUa	See FN	See FN	1
WET – Acute Vertebrate			15		TUa	See FN	See FN	1
WET – Chronic Invertebrate			90		TUc	See FN	See FN	1
WET – Chronic Vertebrate			90		TUc	See FN	See FN	1

FOOTNOTES

1 - Whole Effluent Toxicity (WET) Testing:

Testing Requirements - WET testing shall consist of **Acute and if necessary Chronic**. WET testing shall be performed in accordance with 40 CFR Part 136 and TOGS 1.3.2 unless prior written approval has been obtained from the Department. The test species shall be *Ceriodaphnia dubia* (water flea - invertebrate) and *Pimephales promelas* (fathead minnow - vertebrate). Receiving water collected upstream from the discharge should be used for dilution. All tests conducted should be static-renewal (two 24 hr composite samples with one renewal for Acute tests and three 24 hr composite samples with two renewals for Chronic tests). The appropriate dilution series bracketing the IWC and including one exposure group of 100% effluent should be used to generate a definitive test endpoint, otherwise an immediate rerun of the test is required. WET testing shall be coordinated with the monitoring of chemical and physical parameters limited by this permit so that the resulting analyses are also representative of the sample used for WET testing. The ratio of critical receiving water flow to discharge flow (i.e. dilution ratio) at outfall 003 is **0.28:1** for Acute, and **0.56:1** for Chronic. The ratio of critical receiving water flow to discharge flow (i.e. dilution ratio) at outfall 023 is **50:1** for Acute, and **90:1** for Chronic.

Monitoring Period - WET testing at outfall 003 shall be performed **Quarterly** beginning in January and lasting for a period of one full year, every five years, commencing with January 2011. WET testing at outfall 023 shall be performed **Quarterly** beginning in January and lasting for a period of one full year, every five years, commencing with the first January following the EDPM.

Reporting - Toxicity Units shall be calculated and reported on the DMR as follows: $TUa = (100)/(48 \text{ hr } LC_{50})$ or $(100)/(48 \text{ hr } EC_{50})$ (note that Acute data is generated by both Acute and Chronic testing) and $TUc = (100)/(NOEC)$ when Chronic testing has been performed or $TUc = (TUa) \times (10)$ when only Acute testing has been performed and is used to predict Chronic test results, where the 48 hr LC_{50} or 48 hr EC_{50} and NOEC are expressed in % effluent. This must be done for both species and using the Most Sensitive Endpoint (MSE) or the lowest NOEC and corresponding highest TUc . Report a TUa of 0.3 if there is no statistically significant toxicity in 100% effluent compared to control.

The complete test report including all corresponding results, statistical analyses, reference toxicity data, daily average flow at the time of sampling and other appropriate supporting documentation, shall be submitted within 60 days following the end of each test period to the Toxicity Testing Unit. A summary page of the test results for the invertebrate and vertebrate species indicating TUa , 48 hr LC_{50} or 48 hr EC_{50} for Acute tests and/or TUc , NOEC, IC_{25} , and most sensitive endpoints for Chronic tests, should also be included at the beginning of the test report.

WET Testing Action Level Exceedances - If an action level is exceeded then the Department may require the permittee to conduct additional WET testing including Acute and/or Chronic tests. Additionally, the permittee may be required to perform a Toxicity Reduction Evaluation (TRE) in accordance with Department guidance. If such additional testing or performance of a TRE is necessary, the permittee shall be notified in writing by the Regional Water Engineer. The written notification shall include the reason(s) why such testing or a TRE is required.

2. Use EPA Method 1631.

3. Applicable after Plant Modernization is complete and Quarry Water is no longer a constituent of the Outfall.

4. Monitor Flow and TDS monthly upstream of Outfalls 006 and 007 in Coeymans Creek from April 2015 to October 2015 to ascertain compliance with WQS.

MERCURY MINIMIZATION PROGRAM

1. **General** - The permittee shall develop, implement, and maintain a Mercury Minimization Program (MMP) for those outfalls which have mercury effluent limits. The MMP is required because the 50 ng/L permit limit exceeds the statewide water quality based effluent limit (WQBEL) of 0.70 nanograms/liter (ng/L) for Total Mercury. The goal of the MMP is to reduce mercury effluent levels in pursuit of the WQBEL.
2. **MMP Elements** - The MMP shall be documented in narrative form and shall include any necessary drawings or maps. Other related documents already prepared for the facility may be used as part of the MMP and may be incorporated by reference. As a minimum, the MMP shall include an on-going program consisting of: periodic monitoring; an acceptable control strategy which will become enforceable under this permit; and, submission of periodic status reports.
 - A. **Monitoring** - The permittee shall conduct periodic monitoring designed to quantify and, over time, track the reduction of mercury. Wastewater treatment plant influents and effluents, and other outfalls shall be monitored in accordance with the minimum frequency specified on the mercury permit limits page. Additionally, key locations in the wastewater and/or storm water collection systems, and known or potential mercury sources, including raw materials, shall be monitored at the above frequency during the first year of the MMP. Monitoring of key locations and known/potential sources may be reduced during subsequent years if downstream outfalls have maintained Mercury levels less than 50 ng/l during the previous year. Additional monitoring must be completed as may be required elsewhere in this permit or upon Department request. Monitoring shall be coordinated so that the results can be effectively compared between internal locations and final outfalls.

All permit-related wastewater and storm water mercury compliance point (outfall) monitoring shall be performed using EPA Method 1631. Use of EPA Method 1669 during sample collection is recommended. Unless otherwise specified, all samples should be grabs. Monitoring at influent and other locations tributary to compliance points may be performed using either EPA Methods 1631 or 245.7. Monitoring of raw materials, equipment, treatment residuals, and other non-wastewater/non-storm water substances may be performed using other methods as appropriate.
 - B. **Control Strategy** - An acceptable control strategy is required for reducing mercury discharges via cost-effective measures, which may include, but is not limited to, source identification, more stringent control of tributary waste streams, remediation, and/or installation of new or improved treatment facilities. Required monitoring shall also be used, and supplemented if appropriate, to determine the most effective way to operate the wastewater treatment system(s) to ensure effective removal of mercury while maintaining compliance with other permit requirements.
 - C. **Annual Status Report** - An annual status report shall be submitted to the Regional Water Engineer and to the Bureau of Water Permits summarizing: (a) all MMP monitoring results for the previous year; (b) a list of known and potential mercury sources; (c) all action undertaken pursuant to the strategy during the previous year; (d) actions planned for the upcoming year, and (e) progress toward the goal. The first annual status report is due October 1, 2011 and follow-up status reports are due annually thereafter. A file shall be maintained containing all MMP documentation which shall be available for review by DEC representatives. Copies shall be provided upon request.
3. **MMP Modification** - The MMP shall be modified whenever: (a) changes at the facility or within the collection system increase the potential for mercury discharges; (b) actual discharges exceed 50 ng/L; (c) a letter from the Department identifies inadequacies in the MMP; or (d) pursuant to a permit modification.

BIOLOGICAL MONITORING REQUIREMENTS

All submissions under this section should provide, unless otherwise noted:

Two (2) hard copies and one (1) digital copy to the Steam Electric Unit Leader;
One (1) copy of the cover letter to the Division of Water, SPDES Compliance Information Section; and
One (1) copy of the cover letter to the Regional Water Engineer

Implementation of Best Technology Available

1. By July 1, 2016 the permittee must install and operate the following technologies and implement the following operational measures to meet the Best Technology Available requirements of 6 NYCRR Parts 704.1 and 704.5 and the performance goals of CP-#52 for the modernized Lafarge facility:
 - a) A closed-cycle glycol cooling system for cement manufacturing facility;
 - b) A closed-cycle cooling system for the co-generation facility;
 - c) Installation and operation of 0.5 mm cylindrical wedgewire screens with a maximum through slot velocity of 0.5 fps at the current cooling water intake structure;
 - d) Use alternative primary sources of water (quarry water, storm water and well water) to meet cooling needs of the facility; and
 - e) Limit the use of Hudson River water for cooling and process purposes to 2 MGD, and only when the primary sources are inadequate to meet the cooling and process needs of the facility.

Technology Installation and Operation Plan

2. Within 15 months of the effective date of the permit modification (EDPM + 15 months) requiring technologies and operational measures in Biological Monitoring Requirement 1 to meet the standards in 6 NYCRR Part 704.5 and § 316(b) of the Clean Water Act, the permittee must submit an approvable *Technology Installation and Operation Plan*. This plan must include, but is not limited to, the following:
 - a) A schedule for the installation and operation of the closed-cycle glycol cooling system for cement manufacturing;
 - b) A schedule for the installation and operation of the closed-cycle cooling system for the co-generation facility;
 - c) A schedule for the installation and operation of 0.5 mm cylindrical wedgewire screens;
 - d) Approvable, preliminary plans, drawings, descriptions and operating procedures for the technologies identified in Requirement 1; and
 - e) A schedule to implement the operational measures in Requirement 1(d) and (e).

Upon receipt of Department approval, the permittee must implement the *Technology Installation and Operation Plan* in accordance with the approved schedule. The *Technology Installation and Operation Plan* and approved schedule will become an enforceable condition of this SPDES permit.

Verification Monitoring Reporting

3. By February 1, and every year thereafter, the permittee must submit an *Annual Water Use Summary* report. This report shall contain monthly totals of Hudson River water used for the previous year. This report shall contain the daily maximum flow for each month, and monthly summaries of flows of Hudson River water used for the previous year. Daily total intake flow shall be calculated on the basis of circulating water pump operation hourly averages.

Additional Reporting Requirements

4. The permittee must maintain records of all data, reports and analysis pertaining to compliance with 6NYCRR Part 704 and Section 316(b) CWA for a period no less than 10 years from EDP.
5. The permittee must submit status reports at EDP + 4.5 years. At a minimum, this status report must include a description of the operational status of the facility during the preceding 4.5 years and compliance with Biological Requirements 1 and 2 of this permit.

General Requirement

6. Modification of the facility cooling water intake must not occur without prior Department approval. The permittee must submit written notification, including detailed descriptions and plans, to the NYS DEC Steam Electric Unit; the Director of the Bureau of Water Compliance Program; and both the Regional Permit Administrator and the Regional Water Engineer, Region 4, at least 60 days prior to any proposed change which would result in the alteration of the permitted operation, location, design, construction or capacity of the cooling water intake structure. The permittee must submit with the written notification a demonstration that the change reflects the best technology available for minimizing adverse environmental impacts pursuant to 6 NYCRR §704.5, the Performance Goals of CP-#52, and Section 316(b) of the Clean Water Act. As determined by NYS DEC, a permit modification application in accordance with 6 NYCRR Part 621 may be required.

SCHEDULE OF COMPLIANCE - BIOLOGICAL MONITORING REQUIREMENTS

The permittee shall comply with the following schedule:

Outfall Number(s)	Compliance Action *	Due Date
NA	BMR 1. Permittee shall implement technologies and operational measures to meet requirements of 6 NYCRR Parts 704.1 and 704.5 and the performance goals of CP-#52	July 1, 2016
	BMR 2. Submit an approvable Technology Installation and Operational Plan	EDPM + 15 months
	BMR 3. Submit annual Water Use Summary Report	February 1, and every year thereafter

* Where applicable, **Compliance Action** numbers coincide with action item numbers found under **Biological Monitoring Requirements**.

SPECIAL CONDITIONS - INDUSTRY BEST MANAGEMENT PRACTICES

1. **General** - The permittee shall develop, maintain, and implement a Best Management Practices (BMP) plan to prevent releases of significant amounts of pollutants to the waters of the State through plant site runoff; spillage and leaks; sludge or waste disposal; and storm water discharges including, but not limited to, drainage from raw material storage.

The BMP plan shall be documented in narrative form and shall include the 13 minimum BMPs and any necessary plot plans, drawings, or maps. Other documents already prepared for the facility such as a Safety Manual or a Spill Prevention, Control and Countermeasure (SPCC) plan may be used as part of the plan and may be incorporated by reference. A copy of the current BMP plan shall be submitted to the Department as required in item (2.) below and a copy must be maintained at the facility and shall be available to authorized Department representatives upon request.

2. **Compliance Deadlines** – An **updated** BMP plan shall be submitted by within six months of the effective date of the permit to the Regional Water Engineer. The BMP plan shall be implemented within 6 months of submission, unless a different time frame is approved by the Department. The BMP plan shall be reviewed annually and shall be modified whenever: (a) changes at the facility materially increase the potential for releases of pollutants; (b) actual releases indicate the plan is inadequate, or (c) a letter from the Department identifies inadequacies in the plan. The permittee shall certify in writing, as an attachment to the December Discharge Monitoring Report (DMR), that the annual review has been completed. All BMP plan revisions (with the exception of SWPPPs - see item (4.B.) below) must be submitted to the Regional Water Engineer within 30 days. Note that the permittee is not required to obtain Department approval of the BMP plan (or of any SWPPPs) unless notified otherwise. Subsequent modifications to or renewal of this permit does not reset or revise these deadlines unless a new deadline is set explicitly by such permit modification or renewal.

3. **Facility Review** - The permittee shall review all facility components or systems (including but not limited to material storage areas; in-plant transfer, process, and material handling areas; loading and unloading operations; storm water, erosion, and sediment control measures; process emergency control systems; and sludge and waste disposal areas) where materials or pollutants are used, manufactured, stored or handled to evaluate the potential for the release of pollutants to the waters of the State. In performing such an evaluation, the permittee shall consider such factors as the probability of equipment failure or improper operation, cross-contamination of storm water by process materials, settlement of facility air emissions, the effects of natural phenomena such as freezing temperatures and precipitation, fires, and the facility's history of spills and leaks. The relative toxicity of the pollutant shall be considered in determining the significance of potential releases.

The review shall address all substances present at the facility that are identified in Tables 6-10 of SPDES application Form NY-2C (available at http://www.dec.ny.gov/docs/permits_ej_operations_pdf/form2c.pdf) or that are required to be monitored for by the SPDES permit.

4. A. **13 Minimum BMPs** - Whenever the potential for a release of pollutants to State waters is determined to be present, the permittee shall identify BMPs that have been established to prevent or minimize such potential releases. Where BMPs are inadequate or absent, appropriate BMPs shall be established. In selecting appropriate BMPs, the permittee shall consider good industry practices and, where appropriate, structural measures such as secondary containment and erosion/sediment control devices and practices. USEPA guidance for development of storm water elements of the BMP is available in the September 1992 manual *Storm Water Management for Industrial Activities*, EPA 832-R-92-006 (available from NTIS, 703-487-4650, order # PB 92235969). As a minimum, the plan shall include the following BMPs:

- | | | |
|-------------------------------------|---|---------------------------------|
| 1. BMP Pollution Prevention Team | 6. Security | 10. Spill Prevention & Response |
| 2. Reporting of BMP Incidents | 7. Preventive Maintenance | 11. Erosion & Sediment Control |
| 3. Risk Identification & Assessment | 8. Good Housekeeping | 12. Management of Runoff |
| 4. Employee Training | 9. Materials/Waste Handling, Storage, & Compatibility | 13. Street Sweeping |
| 5. Inspections and Records | | |

Note that for some facilities, especially those with few employees, some of the above BMPs may not be applicable. It is acceptable in these cases to indicate "Not Applicable" for the portion(s) of the BMP Plan that do not apply to your facility, along with an explanation.

B. Storm Water Pollution Prevention Plans (SWPPPs) Required for Discharges of Storm Water From Construction Activity to Surface Waters - As part of BMP #11, a SWPPP shall be developed prior to the initiation of any site disturbance of one acre or more of

uncontaminated area. Uncontaminated area means soils or groundwater which are free of contamination by any toxic or non-conventional pollutants identified in Tables 6-10 of SPDES application Form NY-2C. Disturbance of any size contaminated area(s) and the resulting discharge of contaminated storm water is not authorized by this permit unless the discharge is under State or Federal oversight as part of a remedial program or after review by the Regional Water Engineer; nor is such discharge authorized by any SPDES general permit for storm water discharges. SWPPPs are not required for discharges of storm water from construction activity to ground waters.

The SWPPP shall conform to the *New York Standards and Specifications for Erosion and Sediment Control* and *New York State Storm Water Management Design Manual*, unless a variance has been obtained from the Regional Water Engineer, and to any local requirements. The permittee shall submit a copy of the SWPPP and any amendments thereto to the local governing body and any other authorized agency having jurisdiction or regulatory control over the construction activity **at least 30 days prior to soil disturbance**. The SWPPP shall also be submitted to the Regional Water Engineer if contamination, as defined above, is involved and the permittee must obtain a determination of any SPDES permit modifications and/or additional treatment which may be required prior to soil disturbance. Otherwise, the SWPPP shall be submitted to the Department only upon request. When a SWPPP is required, a properly completed *Notice of Intent* (NOI) form shall be submitted (available at www.dec.ny.gov/chemical/43133.html) prior to soil disturbance. Note that submission of a NOI is required for informational purposes; the permittee is not eligible for and will not obtain coverage under any SPDES general permit for storm water discharges, nor are any additional permit fees incurred. SWPPPs must be developed and submitted for subsequent site disturbances in accordance with the above requirements. The permittee is responsible for ensuring that the provisions of each SWPPP are properly implemented.

5. **Required Sampling For "Hot Spot" Identification** - Development of the BMP plan shall include sampling of waste stream segments for the purpose of pollutant "hot spot" identification. The economic achievability of effluent limits will not be considered until plant site "hot spot" sources have been identified, contained, removed or minimized through the imposition of site specific BMPs or application of internal facility treatment technology. For the purposes of this permit condition a "hot spot" is a segment of an industrial facility (including but not limited to soil, equipment, material storage areas, sewer lines etc.) which contributes elevated levels of problem pollutants to the wastewater and/or storm water collection system of that facility.

For the purposes of this definition, problem pollutants are substances for which treatment to meet a water quality or technology requirement may, considering the results of waste stream segment sampling, be deemed unreasonable. For the purposes of this definition, an elevated level is a concentration or mass loading of the pollutant in question which is sufficiently higher than the concentration of that same pollutant at the compliance monitoring location so as to allow for an economically justifiable removal and/or isolation of the segment and/or B.A.T. treatment of wastewaters emanating from the segment.

6. **Facilities with Petroleum and/or Chemical Bulk Storage (PBS and CBS) Areas** - Compliance must be maintained with all applicable regulations including those involving releases, registration, handling and storage (6NYCRR 595-599 and 612-614). Storm water discharges from handling and storage areas should be eliminated where practical.

A. **Spill Cleanup** - All spilled or leaked substances must be removed from secondary containment systems as soon as practical and for CBS storage areas within 24 hours, unless written authorization is received from the Department. The containment system must be thoroughly cleaned to remove any residual contamination which could cause contamination of storm water and the resulting discharge of pollutants to waters of the State. Following spill cleanup the affected area must be completely flushed with clean water three times and the water removed after each flushing for proper disposal in an on-site or off-site wastewater treatment plant designed to treat such water and permitted to discharge such wastewater. Alternately, the permittee may test the first batch of storm water following the spill cleanup to determine discharge acceptability. If the water contains no pollutants it may be discharged. Otherwise it must be disposed of as noted above. See *Discharge Monitoring* below for the list of parameters to be sampled for.

B. **Discharge Operation** - Storm water must be removed before it compromises the required containment system capacity. Each discharge may only proceed with the prior approval of the permittee staff person responsible for ensuring SPDES permit compliance. Bulk storage secondary containment drainage systems must be locked in a closed position except when the operator is in the process of draining accumulated storm water. Transfer area secondary containment drainage systems must be locked in a closed position during all transfers and must not be reopened unless the transfer area is clean of contaminants. Storm water discharges from secondary containment systems should be avoided during periods of precipitation. A logbook shall be maintained on site noting the date, time and personnel supervising each discharge.

C. **Discharge Screening** - Prior to each discharge from a secondary containment system the storm water must be screened for contamination*. All storm water must be inspected for visible evidence of contamination. Additional screening methods shall be developed by the permittee as part of the overall BMP Plan, e.g. the use of volatile gas meters to detect the presence of gross levels of gasoline or volatile organic compounds. If the screening indicates contamination, the permittee must collect and analyze a representative sample** of the storm water. If the water contains no pollutants it may be discharged. Otherwise it must either be disposed of in an on site or off site wastewater treatment plant designed to treat and permitted to discharge such wastewater or the

Regional Water Engineer can be contacted to determine if it may be discharged without treatment.

D. Discharge Monitoring - Unless the discharge from any bulk storage containment system outlet is identified in the SPDES permit as an outfall with explicit effluent and monitoring requirements, the permittee shall monitor the outlet as follows:

(i) Bulk Storage Secondary Containment Systems:

(a) The volume of each discharge from each outlet must be monitored. Discharge volume may be calculated by measuring the depth of water within the containment area times the wetted area converted to gallons or by other suitable methods. A representative sample shall be collected of the first discharge* following any cleaned up spill or leak. The sample must be analyzed for pH, the substance(s) stored within the containment area and any other pollutants the permittee knows or has reason to believe are present.**

(b) Every fourth discharge* from each outlet must be sampled for pH, the substance(s) stored within the containment area and any other pollutants the permittee knows or has reason to believe are present.**

(ii) Transfer Area Secondary Containment Systems:

The first discharge* following any spill or leak must be sampled for flow, pH, the substance(s) transferred in that area and any other pollutants the permittee knows or has reason to believe are present.**

E. Discharge Reporting - Any results of monitoring required above, excluding screening data, must be submitted to the Department by appending them to the corresponding DMR. Failure to perform the required discharge monitoring and reporting shall constitute a violation of the terms of the SPDES permit.

F. Prohibited Discharges - In all cases, any discharge which contains a visible sheen, foam, or odor, or may cause or contribute to a violation of water quality is prohibited. The following discharges are prohibited unless specifically authorized elsewhere in this SPDES permit: spills or leaks, tank bottoms, maintenance wastewaters, wash waters where detergents or other chemicals have been used, tank hydrotest and ballast waters, contained fire fighting runoff, fire training water contaminated by contact with pollutants or containing foam or fire retardant additives, and unnecessary discharges of water or wastewater into secondary containment systems.

* Discharge includes storm water discharges and snow and ice removal. If applicable, a representative sample of snow and/or ice should be collected and allowed to melt prior to assessment.

** If the stored substance is gasoline or aviation fuel then sample for Oil & Grease, Benzene, Ethylbenzene, Naphthalene, Toluene, and Total Xylenes (EPA Method 602). If the stored substance is kerosene, diesel fuel, fuel oil, or lubricating oil then sample for Oil & Grease and Polynuclear Aromatic Hydrocarbons (EPA Method 610). If the substance(s) are listed in Tables 6-8 of SPDES application form NY-2C, then sampling is required. If the substance(s) are listed in NY-2C Tables 9-10, sampling for appropriate indicator parameters may be required, e.g. BOD₅ or Toxicity Testing. Contact the facility inspector for further guidance. In all cases Flow and pH monitoring are required.

DISCHARGE NOTIFICATION REQUIREMENTS

- a) Except as provided in (c) of these Discharge Notification Act requirements, the permittee shall install and maintain identification signs at all outfalls to surface waters listed in this permit. Such signs shall be installed within 90 days of the Effective Date Permit.
- b) Subsequent modifications to or renewal of this permit does not reset or revise the deadline set forth in (a) above, unless a new deadline is set explicitly by such permit modification or renewal.
- c) The Discharge Notification Requirements described herein do not apply to outfalls from which the discharge is composed exclusively of storm water, or discharges to ground water.
- d) The sign(s) shall be conspicuous, legible and in as close proximity to the point of discharge as is reasonably possible while ensuring the maximum visibility from the surface water and shore. The signs shall be installed in such a manner to pose minimal hazard to navigation, bathing or other water related activities. If the public has access to the water from the land in the vicinity of the outfall, an identical sign shall be posted to be visible from the direction approaching the surface water.

The signs shall have **minimum** dimensions of eighteen inches by twenty four inches (18" x 24") and shall have white letters on a green background and contain the following information:

N.Y.S. PERMITTED DISCHARGE POINT

SPDES PERMIT No.: NY _____

OUTFALL No. : _____

For information about this permitted discharge contact:

Permittee Name: _____

Permittee Contact: _____

Permittee Phone: () - ### - #####

OR:

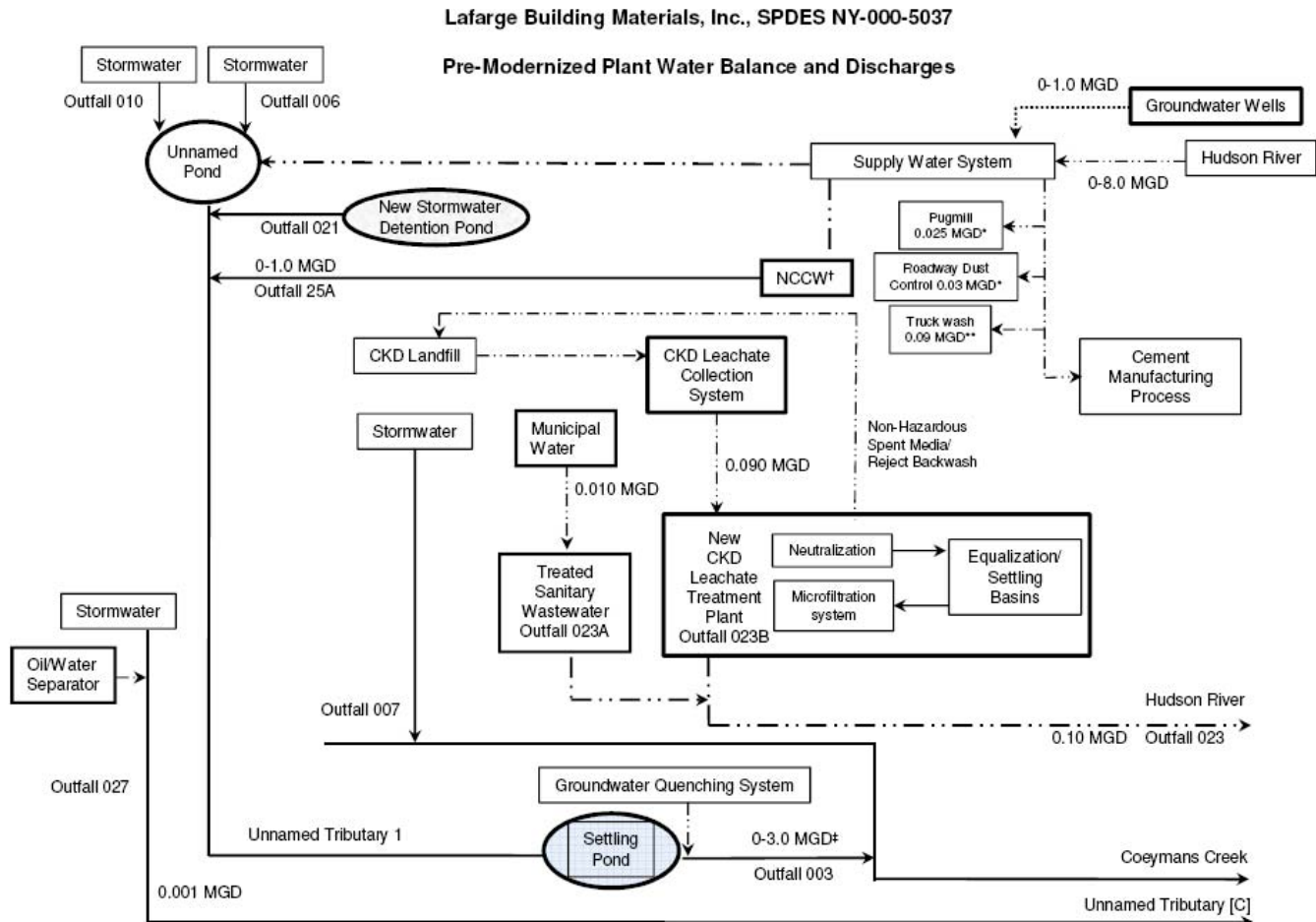
NYSDEC Division of Water Regional Office Address :

NYSDEC Division of Water Regional Phone: () - ### - #####

- e) For each discharge required to have a sign in accordance with a), the permittee shall, concurrent with the installation of the sign, provide a repository of copies of the Discharge Monitoring Reports (DMRs), as required by the **RECORDING, REPORTING AND ADDITIONAL MONITORING REQUIREMENTS** page of this permit. This repository shall be open to the public, at a minimum, during normal daytime business hours. The repository may be at the business office repository of the permittee or at an off-premises location of its choice (such location shall be the village, town, city or county clerk's office, the local library or other location as approved by the Department). In accordance with the **RECORDING, REPORTING AND ADDITIONAL MONITORING REQUIREMENTS** page of your permit, each DMR shall be maintained on record for a period of five years.
- f) The permittee shall periodically inspect the outfall identification signs in order to ensure that they are maintained, are still visible and contain information that is current and factually correct.

FLOW DIAGRAM AND MONITORING LOCATIONS

The permittee shall take samples and measurements, to comply with the monitoring requirements specified in this permit, at the location(s) specified below:



Outfalls 008 and 012 to 019 are not shown on this diagram

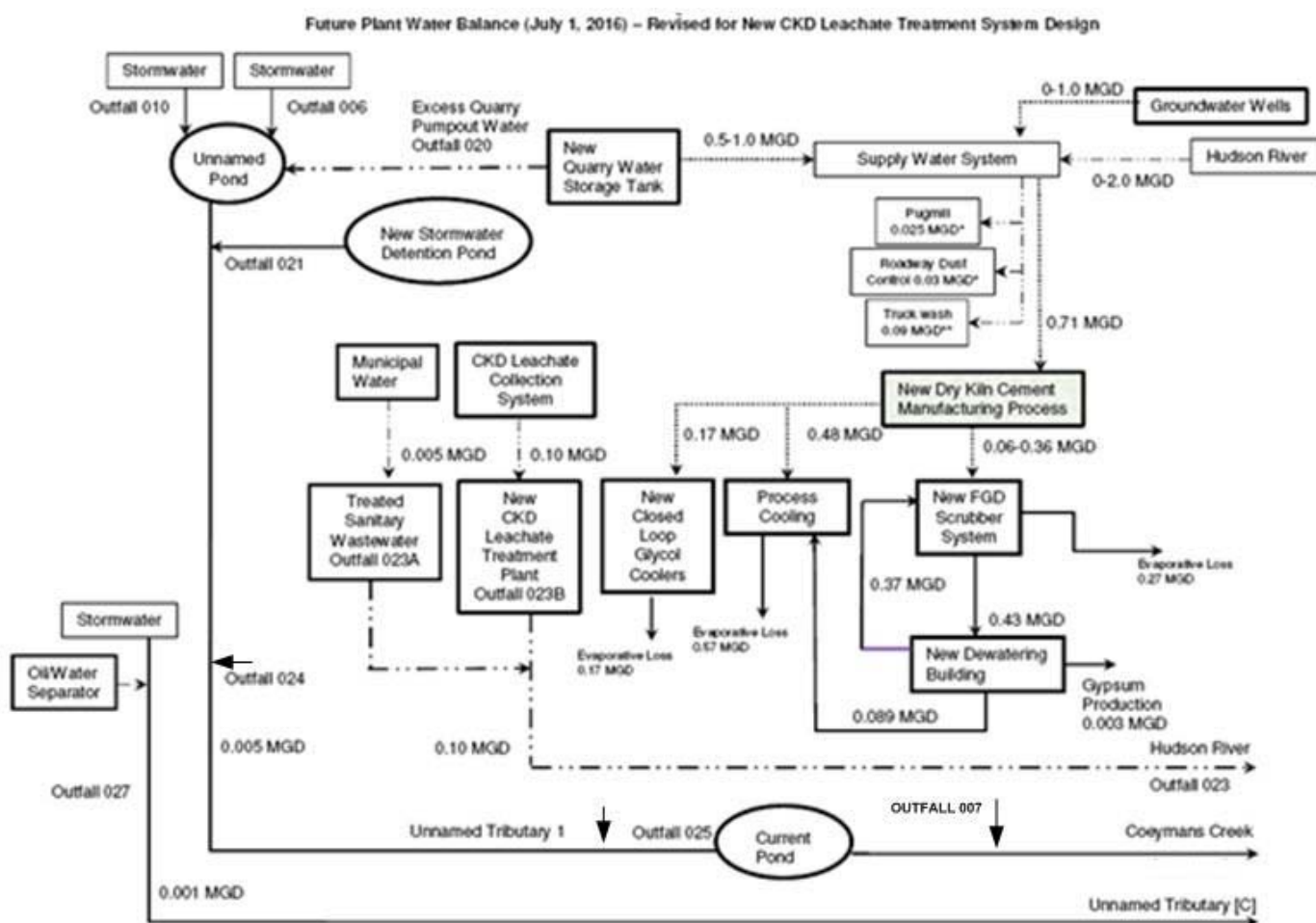
Non-Contact Cooling Water (NCCW) will be eliminated when the plant modernization is completed and will be replaced with closed cycle cooling.

Outfalls 004, 005, and 011 are deleted.

FLOW DIAGRAM AND MONITORING LOCATIONS

The permittee shall take samples and measurements, to comply with the monitoring requirements specified in this permit, at the location(s) specified below:

Effective after the plant modernization is completed.



After the plant modernization is completed, outfall 003 changes to storm water and excess Quarry Pumpout Water (Outfall 020).

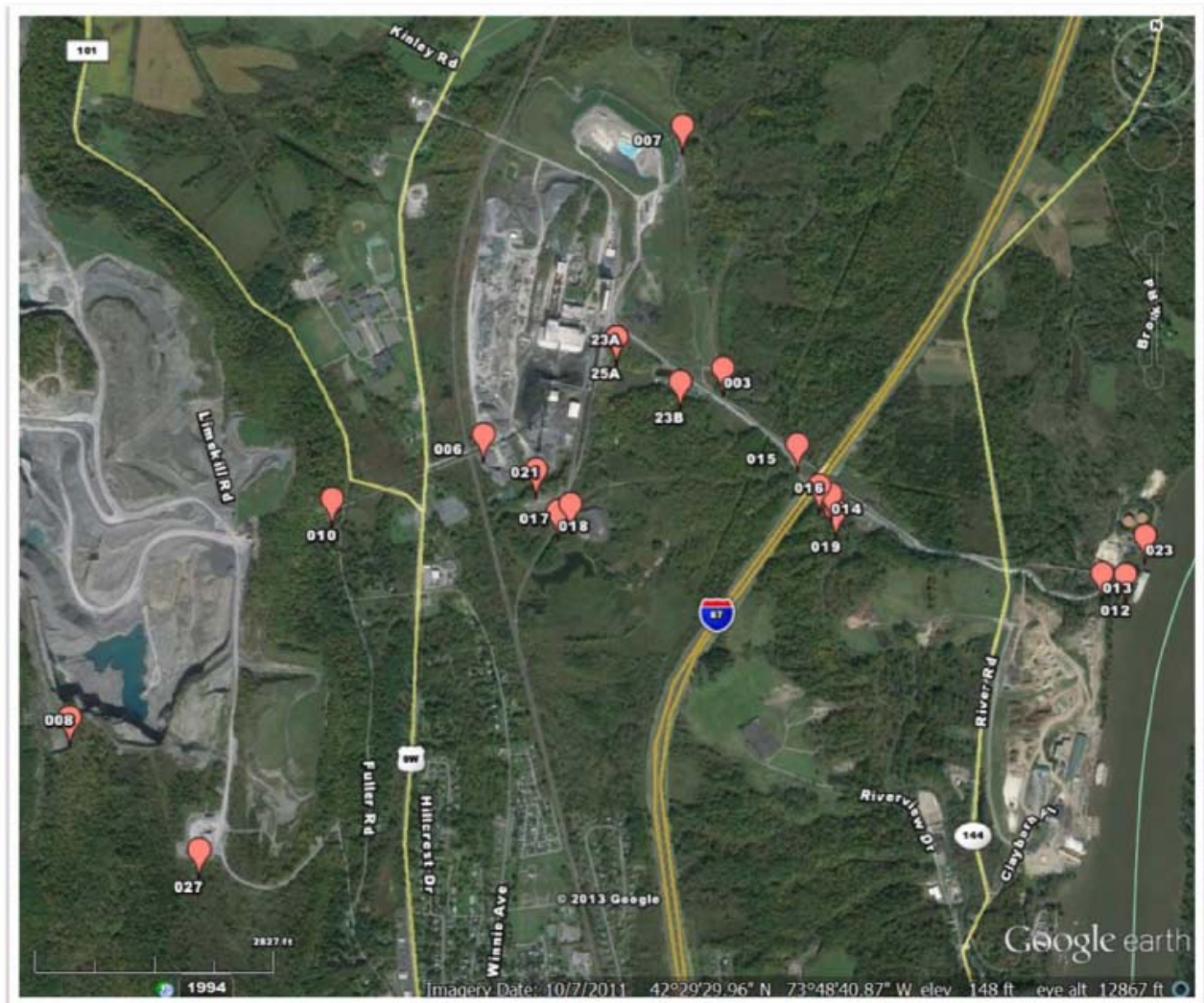


Figure 1 Map Showing All Outfall Locations
SPDES Permit NY-000-5037

Outfalls 021, 024, and 025 become active in July 2016.

GENERAL REQUIREMENTS

- A. The regulations in 6 NYCRR Part 750 are hereby incorporated by reference and the conditions are enforceable requirements under this permit. The permittee shall comply with all requirements set forth in this permit and with all the applicable requirements of 6 NYCRR Part 750 incorporated into this permit by reference, including but not limited to the regulations in paragraphs B through I as follows:.
- B. General Conditions
- | | |
|---|---|
| Duty to comply | 6NYCRR Part 750-2.1(e) & 2.4 |
| Duty to reapply | 6NYCRR Part 750-1.16(a) |
| Need to halt or reduce activity not a defense | 6NYCRR Part 750-2.1(g) |
| Duty to mitigate | 6NYCRR Part 750-2.7(f) |
| Permit actions | 6NYCRR Part 750-1.1(c), 1.18, 1.20 & 2.1(h) |
| Property rights | 6NYCRR Part 750-2.2(b) |
| Duty to provide information | 6NYCRR Part 750-2.1(i) |
| Inspection and entry | 6NYCRR Part 750-2.1(a) & 2.3 |
- C. Operation and Maintenance
- | | |
|--------------------------------|--|
| Proper Operation & Maintenance | 6NYCRR Part 750-2.8 |
| Bypass | 6NYCRR Part 750-1.2(a)(17), 2.8(b) & 2.7 |
| Upset | 6NYCRR Part 750-1.2(a)(94) & 2.8(c) |
- D. Monitoring and Records
- | | |
|------------------------|---|
| Monitoring and records | 6NYCRR Part 750-2.5(a)(2), 2.5(c)(1), 2.5(c)(2), 2.5(d) & 2.5(a)(6) |
| Signatory requirements | 6NYCRR Part 750-1.8 & 2.5(b) |
- E. Reporting Requirements
- | | |
|--|--------------------------------------|
| Reporting requirements | 6NYCRR Part 750-2.5, 2.6, 2.7 & 1.17 |
| Anticipated noncompliance | 6NYCRR Part 750-2.7(a) |
| Transfers | 6NYCRR Part 750-1.17 |
| Monitoring reports | 6NYCRR Part 750-2.5(e) |
| Compliance schedules | 6NYCRR Part 750-1.14(d) |
| 24-hour reporting | 6NYCRR Part 750-2.7(c) & (d) |
| Other noncompliance | 6NYCRR Part 750-2.7(e) |
| Other information | 6NYCRR Part 750-2.1(f) |
| Additional conditions applicable to a POTW | 6NYCRR Part 750-2.9 |
| Special reporting requirements for discharges that are not POTWs | 6NYCRR Part 750-2.6 |
- F. Planned Changes
- The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:
- The alteration or addition to the permitted facility may meet of the criteria for determining whether facility is a new source in 40 CFR §122.29(b); or
- The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, or to notification requirements under 40 CFR §122.42(a)(1); or
- The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

In addition to the Department, the permittee shall submit a copy of this notice to the United States Environmental Protection Agency at the following address: U.S. EPA Region 2, Clean Water Regulatory Branch, 290 Broadway, 24th Floor, New York, NY 10007-1866.

G. Notification Requirement for POTWs

All POTWs shall provide adequate notice to the Department and the USEPA of the following:

Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to section 301 or 306 of CWA if it were directly discharging those pollutants; or

Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.

For the purposes of this paragraph, adequate notice shall include information on:
the quality and quantity of effluent introduced into the POTW, and

any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

POTWs shall submit a copy of this notice to the United States Environmental Protection Agency, at the following address:
U.S. EPA Region 2, Clean Water Regulatory Branch, 290 Broadway, 24th Floor, New York, NY 10007-1866.

H. Sludge Management

The permittee shall comply with all applicable requirements of 6 NYCRR Part 360.

I. SPDES Permit Program Fee

The permittee shall pay to the Department an annual SPDES permit program fee within 30 days of the date of the first invoice, unless otherwise directed by the Department, and shall comply with all applicable requirements of ECL 72-0602 and 6 NYCRR Parts 480, 481 and 485. Note that if there is inconsistency between the fees specified in ECL 72-0602 and 6 NYCRR Part 485, the ECL 72-0602 fees govern.

J. Water Treatment Chemicals (WTCs)

New or increased use and discharge of a WTC requires prior Department review and authorization. At a minimum, the permittee must notify the Department in writing of its intent to change WTC use by submitting a completed *WTC Notification Form* for each proposed WTC. The Department will review that submittal and determine if a SPDES permit modification is necessary or whether WTC review and authorization may proceed outside of the formal permit administrative process. The majority of WTC authorizations do not require SPDES permit modification. In any event, use and discharge of a WTC shall not proceed without prior authorization from the Department. Examples of WTCs include biocides, coagulants, conditioners, corrosion inhibitors, defoamers, deposit control agents, flocculants, scale inhibitors, sequestrants, and settling aids.

WTC use shall not exceed the rate explicitly authorized by this permit or otherwise authorized in writing by the Department. The permittee shall **maintain a logbook** of all WTC use, noting for each WTC the date, time, exact location, and amount of each dosage, and, the name of the individual applying or measuring the chemical. The logbook must also document that adequate process controls are in place to ensure that excessive levels of WTCs are not used.

The permittee shall **submit a completed WTC Annual Report Form** each year that they use and discharge WTCs. This form shall be attached to either the December DMR or the annual monitoring report required below.

The *WTC Notification Form* and *WTC Annual Report Form* are available from the Department's website at <http://www.dec.ny.gov/permits/93245.html>.

RECORDING, REPORTING AND ADDITIONAL MONITORING REQUIREMENTS

A. The monitoring information required by this permit shall be summarized, signed and retained for a period of at least five years from the date of the sampling for subsequent inspection by the Department or its designated agent. **Also, monitoring information required by this permit shall be summarized and reported by submitting;**

☒ completed and signed Discharge Monitoring Report (DMR) forms for each One month reporting period to the locations specified below. Blank forms are available at the Department's Albany office listed below. The first reporting period begins on the effective date of this permit and the reports will be due no later than the 28th day of the month following the end of each reporting period.

☐ (if box is checked) an annual report to the Regional Water Engineer at the address specified below. The annual report is due by February 1 each year and must summarize information for January to December of the previous year in a format acceptable to the Department.

☐ (if box is checked) a monthly "Wastewater Facility Operation Report..." (form 92-15-7) to the:

<input type="checkbox"/> Regional Water Engineer and/or	<input type="checkbox"/> County Health Department or Environmental Control Agency specified below
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to: Send the **original** (top sheet) of each DMR page
Department of Environmental Conservation
Division of Water, Bureau of Water Compliance
625 Broadway, Albany, New York 12233-3506
Phone: (518) 402-8177

Send the **first copy** (second sheet) of each DMR page to:
Department of Environmental Conservation
Regional Water Engineer, Region 4
1130 North Westcott Road
Schenectady, NY 12306-2014
Phone: (518) 357-2045

B. Monitoring and analysis shall be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit.

C. More frequent monitoring of the discharge(s), monitoring point(s), or waters of the State than required by the permit, where analysis is performed by a certified laboratory or where such analysis is not required to be performed by a certified laboratory, shall be included in the calculations and recording of the data on the corresponding DMRs.

D. Calculations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in this permit.

E. Unless otherwise specified, all information recorded on the DMRs shall be based upon measurements and sampling carried out during the most recently completed reporting period.

F. Any laboratory test or sample analysis required by this permit for which the State Commissioner of Health issues certificates of approval pursuant to section 502 of the Public Health Law shall be conducted by a laboratory which has been issued a certificate of approval. Inquiries regarding laboratory certification should be directed to the New York State Department of Health, Environmental Laboratory Accreditation Program.